I DON'T WANT TO, BUT I WILL

The Genesis of Geographic Knowledge: A
Real-Time Developmental Study of
Adolescent Images of Novel
Environments

By DENIS WOOD

A PROJECT GROUP L REPORT

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DEDICATED TO THE ONE I LOVE

There was this song on the radio when I was a lot younger than I am today. Then it was sung by a quartet of girls named Shirley Alston, Doris Kenner, Beverly Lee and Micki Harris, who went under the name of the Shirelles. This song is called "Dedicated To The One I Love" and was written by Pauling-Bass and is published by Armo Music, a BMI outfit. If you knew any of this before you read it here, the chances are you picked up this report by mistake and it might be a good idea for you to stop while you are ahead, and put it down after reading this page. If you didn't know any of this, you still may not want to read on, but the chances are better. When I first listened to this song I didn't know any of this either, I just knew the words and they are perfect for my purposes here.

While I'm far away from you, my baby,
I know it's hard for you, my baby,
Because it's hard for me, my baby,
And the darkest hour is just before dawn.

Each night before you go to bed, my baby,
Whisper a little prayer for me, my baby,
And tell all the stars above,
This is dedicated to the one I love.

Life can never be exactly like we want it to be,
I can be satisfied just knowing you love me,
There's one thing I want you to do especially for me,
And it's something everybody needs.

Each night before you go to bed, my baby,
Whisper a little prayer for me, my baby,
And tell all the stars above,
This is dedicated to the one I love.

This is dedicated to the one I love;

INGRID HANSEN WOOD
ACKNOWLEDGMENTS

There are two sources of critical energy that impinge upon the writer of a dissertation in any American university today. They may have also impinged upon writers of dissertations in earlier times as well and may also impinge upon the writers of dissertations elsewhere in the world. I don't know about that. I only know from where I sit.

One of these sources of critical energy is a little more than somewhat negative: it is, in fact, almost overwhelmingly crushing. You see, for some, the writer of a dissertation is a nobody, a dummy, a nigger, a dust-rag, a toy to be advised (kicked), aided (kneed), supported (tackled), constructively criticized (mutilated) by anyone who has already written a dissertation. Some of these helpful types could not find a predicate in their lunchbag and yet they will adjust the locations of commas; others haven't read a sentence of English in forty-one years and yet they will chop sentences in half and dangle useful remarks like "unclear" in the margins; still others wouldn't recognize a nifty piece of logic if it were dressed in neon doing the boogaloo in the middle of the street at high noon and yet they will be the first to scrawl "non-seq" between each paragraph; my favorite is the guy who has trouble articulating "Good morning" but who just has to write "vague" beside any sentence with more than fourteen words. It seems to be mandatory to scribble such comments in large letters across half the page with indelible felt-tip pens on the assumption that all students are nearly blind.

The reason most comments made by advisors, first and second readers, numerous reviewers and other necessary busybodies are about style, is because they feel that they can deal with such matters one word at a time. This allows them to make a great show of effort without addressing themselves to the content which necessarily spans at least two sentences and sometimes even—heaven forbid!—whole paragraphs. This allows them to read doctoral dissertations while falling asleep or while keeping a spare ear or two on the faculty meeting.

None of this is at all nice and the general effect is to make the student feel entirely incompetent, a vacuous nudnik and an academic peon. This is also the intention. To be fair, not all of my advisors were as bad as the others and some were even human, though to be honest, none was completely free of certain tendencies in this direction and some were the very worst. That all this failed to reduce me to the sludge desired is not a tribute to the humanity of those "helping" me, but rather to the positive effects of a loving home, a healthy diet, plenty of exercise, lots of sleep, a tremendous ego and
other good stuff, not, of course, excluding those irrepressible streaks of humanity that illuminate the most vile of people, transforming them for varying lengths of time into paragons of virtue. These good things, these moments of shimmering light and warmth, these instances of constructive insight, these examples of hospitality, support, aid; these constitute the second source of critical energy, no less critical than the first—in point of fact, infinitely more critical in every sense of the word—and just a smidge more useful.

I shall not specify the sources of crushing critical energy. It would seem merely the mouthings of a perpetual malcontent, a thing, reports to the contrary notwithstanding, I am not. I shall, on the other hand, list each of those sources of positive critical energy and other aid. The list is long, and were my memory very good, could be much, much longer. No dissertation is produced alone; this one was produced with the contributions of many.

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Preface

There is much rodomontade in the social sciences about being objective. Such talk is especially pretentious from the mouths of those whose minds have never been sullied by even the merest passing consideration of what it is that objectivity is supposed to be. There are those who believe it to consist in using the third person, in leaning heavily on the passive voice, in referring to people by numbers or letters, in reserving one's opinion, in avoiding evaluative adjectives or adverbs, ad nauseum. These, of course, are so many red herrings.

Jean Piaget points out that "objectivity consists in so fully realizing the countless intrusions of the self in everyday thought and the countless illusions which result—illusions of sense, language, point of view, value, etc.—that the preliminary step to every judgment is the effort to exclude the intrusive self" (Piaget, 1969, 34). This is all very wonderful, but as he points out the intrusions of self are countless, entrenched, and often so much a part of our life as to be, in the end, quite invisible. Some, such as Berkeley and Hume, would go so far as to say that there were practically nothing but Self and thus forever end the hopeless searching for a way of getting outside ourselves.

Putting aside for the moment the more skeptical viewpoints, consider the impossible difficulties of achieving even Piagetan objectivity. You need first to attain complete self-realization. Then to exclude yourself. How arduous the first task! How impossible the second! And yet, were all this gained, how would the reader, the perceiver, understand that the goal were won? Most likely he would scoff the self-aggrandizing pretentions of the latest scientist-saint.

The die-hard empiricist must deny that objectivity can exist
at all. The positivists affirm its potential being, but place insurmountable obstacles in the path of its attempt. The hardened reader will question its achievement. There are other reasons for ceasing to consider the possibility of being objective, but these three will do. Only unconsidering fools brandish the banner and bandy the word "objective." The rest of us have done with it.

Yet this is no opportunity for erecting the scientific tombstone. Not quite yet. There is a pragmatic, possible, human out: Bare yourself.

Admit your attitudes, beliefs, politics, morals, opinions, enthusiasms, loves, odiums, ethics, religion, class, nationality, parentage, income, address, friends, lovers, philosophies, language, education. Unburden yourself of your secrets. Admit your sins. Let the reader decide if he would buy a used car from you, much less believe your science.

Of course, since you will never become completely self-aware, no more in the subjective case than in the objective, you cannot tell your reader all. He doesn't need it all. He needs enough. He will know.

This dissertation makes no pretense at being objective, whatever that ever was. I tell you as much as I can. I tell you as many of my beliefs as you could want to know. This is my Introduction. I tell you about this project in value-loaded terms. You will not need to ferret these out. They will hit you over the head and sock you in the stomach. Such terms, such opinions run throughout the dissertation. Then I tell you the story of this project, sort of as if you were in my—and not somebody else's—mind. This is Part II of the dissertation. You may believe me if you wish. You may doubt every word. But I'm not connning you. Aside from the value-loaded vocabulary—when I think I've done something wonderful, or stupid, I don't mind giving myself a pat on the back, or a kick in the pants. Parts I and III are what sloppy users of the English language might call "objective." I don't know about that. They're conscientious, honest, rigorous, fair, ethical, responsible—to the extent, of course, that I am these things, no farther.

I think I'm pretty terrific. I tell you so. But you'll make up your mind about me anyway. But I'm not hiding from you in the third person passive voice—as though my science materialized out of thin air and marvelous intentions. I did these things. You know me, I'm

Denis Wood
28 July 1972
Worcester, Massachusetts
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"'I grow old... I grow old... I shall wear the bottoms of my trousers rolled.' What does that mean Mr. Marlowe?"

"Not a bloody thing. It just sounds good."

He smiled. "That is from the 'Love Song of J. Alfred Prufrock.' Here's another one. 'In the room the women come and go/Talking of Michael Angelo.' Does that suggest anything to you, sir?"

"Yeah — it suggests to me that the guy didn't know very much about women."

"My sentiments exactly, sir. Nonetheless I admire T. S. Eliot very much."

...RAYMOND CHANDLER
The Long Goodbye
It was raining.

Like every other night, I had taken the dog for his walk. Only this night wasn't like any other night. No night is, I suppose. The rain beat into my face, and as I turned my back to the wind, I saw Worcester before me. Through the rain its lights were soft and each light was refracted many times by the globes of water on my glasses. There is nothing more beautiful.

The wind shifted. There is nothing more beautiful I thought, as the rain slanted hard against my face, except getting out of the rain. I turned my back to the wind and the city and headed for the building under construction. Usually there was a red car parked in front of it, with an old man in it, to guard the building. The car wasn't there tonight. I couldn't imagine why not. I moved through the rain down the grassy slope to the front of the building and looked a little more closely for the car. It wasn't there. I walked boldly into the building. Inside, before my eyes had a chance to adjust to the hard light of bare bulbs on bare concrete, I saw a blue figure move rapidly toward me. Before it could open its mouth I saw it was a cop, blue jacket, cap, and pants, a night-stick and cuffs on the belt, a badge on the cap.

"Hi," I said, "where's the old man?"

The cop sized me up, sized up my dog, relaxed back into his uniform, and spoke: "He won't be here any more. He drank himself to sleep last night, and some young punks mixed oil into the gas in the lift motor. This morning they ran a load of bricks up, the motor coughed and the whole load hit the ground. If there'd been a man inside, he might have been killed. So they hired us. Twenty-four hour round-the-clock security today on." He had a big soft voice and his whole manner said lonely and I'm glad-you-dropped-in-to-chat. My dog ran nose down back into the night and I leaned against a red steel beam. We talked.

We talked the way complete strangers often talk to each other, those people you meet on buses and planes, the ones you exchange addresses with and then never write. We talked with candor the way people can talk. who have nothing on each other, who can use the stories to no end. We swaggered a little because no one was there to catch us up, but I doubt that we told each other any lies. There was simply no reason to. In less than half an hour he'd managed to tell me how he'd been working for Detroit Cam, a good job on a machine. Then an out-of-stater had come in, and because he had union seniority he'd bumped my friend down to work on the back loading dock. There he'd
fallen under a load beneath the foreman's eye. "Pick it up, if you're a man," the foreman had shouted and he'd tried and ripped his back muscles apart. Doctors and hospitals and lawyers later, he was out of the union, on workman's comp and a partial ADC. In desperation he'd taken this security job on the sly and was pulling down a buck-sixty an hour, with five kids and a wife and the rent to pay. He hated the company, he hated the union, he hated the lawyers and doctors, but he held no grudge against the man who'd come in from another state and bumped him from his job. That's just the way it was.

Out front my dog barked and we wandered out to see what the trouble was. It had stopped raining. Clouds were scudding fast against bright stars and the night was very clean. A man and his son were crossing the property on their way home. The cop warned them off the property and came over to me looking up at the sky and fingerining his club.

"I'll tell you another thing that gets me," he said, his voice poised. "It's these damn spics, these damn Puerto Ricans. Excuse my language, but that's the way I feel. It's not that I'm prejudiced... I mean, the first one to move onto the street, I helped him out, got him a good job down at Brown Shoes, helped him clean up his apartment, everything. I mean, I don't judge a man by the color of his skin. Hell, I've even been godparents to high-yellows. But these Puerto Ricans get me. This guy kept his job for a few months and then quit and went back home. Then he came back a couple weeks later with brothers, sisters, cousins, a wife, kids... they're all so related a kid can't even tell his own father... no, I'm sorry, that's the truth. Anyhow, he doesn't get a new job right away and pretty soon the whole bunch of them are on aid. Every kind of aid. Now here I am, a natural-born American, and these spics come into this country, don't get naturalized or nothing, and they're getting more out of my own government than I am. What do you think of that?"

"Well," I said, "if they're Puerto Ricans, they are Americans. I mean, all Puerto Ricans are born American citizens. Puerto Rico is part of America."

"Ah, you're not going to try and hand me that line of bull, too?" He sighed. "Look, I know all about this stuff. My father came in from Canada and he had to go to Washington for his papers. These guys come over here by the boatload and we feed them and house them, America's just too soft."

"No, you don't understand," I said. "Puerto Ricans are
Americans. They fought in World War II in our Army. They fought in the Korean War. They're fighting now in Vietnam. Puerto Ricans have been Americans almost as long as we've owned Puerto Rico and that's been since the Spanish-American War. Remember about Teddy Roosevelt and San Juan Hill?" I was serious, but smiling. It looked hopeless. We went back and forth on this for a long time and it was hopeless. A few weeks earlier a seventeen year old Puerto Rican girl had turned her rings around and slapped his eleven year old daughter a couple of times, slashing her face. He and his wife went over to the home of the girl's parents and had gotten upset. The two mothers had started fighting, pulling hair and scratching. The Puerto Rican father had wanted to step in, but my friend held him back, wanting to let the two women fight it out. But when his wife had been almost pushed out a second story window the cops had arrived and cooled it and now he was pushing his complaint against the Puerto Rican family before the grand jury.

"So they stand in front on the judge and go yipyipyip," and he pitched his voice up and waved his arms around in imitation. Then they say no comprende. Brother, they sure comprended the day we were there. You should have heard their language...filthy! And I'm no sweet talker myself. Those are the first two words they say when they come into this country, and they're the last two they say when they leave it. I say, keep them out."

After a while I called my dog over and put his collar on and we left. We walked up over the hill through the wet clean grass and once again I looked down on Worcester and listened to the sirens wailing in the night. I wondered about my new friend and the fact that he held no grudge against the American who'd come into the area and cost him his job and his back, and yet hated these foreigners for lots less. Would he have felt differently about it had he known they were Americans by the same birthright as his?

It started to rain again and I went home.

* * *

Thereafter I went many evenings to talk with him. Mostly I just let him talk for he had a lot to say. Friday evenings he worked up at a local college. He hadn't been there long, but each night he was there something happened. The first night he'd been there, he'd been called on the carpet for swinging his club. The second night he'd let one of the college boys walk his rounds with him, and the kid had seen USDA surplus food in the kitchen and had raised a stink.
"So this blankety-blank kid put me in the middle. But this Friday, I tell you, I'm going to throw the book at them. The dean, he told me, turn my head, but I'm not going to. The girls are supposed to be out of the dorms at 2:00. Last week I didn't enforce it but this week, they better watch out. I've got to keep face. These kids get to you and it's all over."

He went over that story with me a hundred times till I knew it better than he did himself. And there were always the unions, the courts, the doctors to talk about. Or the cops. Or the politicians. Or the mailmen. Or the garbage collectors. Or the punks with long hair.

"There are three types of long-hairs," he once told me. "First you have the hippies. They're the oldest. Then you have the yippies, they're more on the violent side. And then...I forget who the third ones are. But they're all dirty pigs, too lazy to take a bath. They all live in my neighborhood. I think I'm going to move out. I mean, the hippies, I could live with them, but not those damn spics. It's them or me. One of us has got to go."

There was always the spics. The day the postponement in his case came he was livid. The Puerto Rican mother had pleaded that her husband was stuck in New York by a broken-down car. The judge had granted the postponement. "What'd he matter? He wasn't involved. It was the women that were fighting. It's the same as I was telling you, too soft. Judges," and he spat against the bare concrete wall of the building, "they're all against me. Wherever I go they're trying to make me trouble. Everywhere I turn."

We saw him Saturday night, my wife and I, after he'd been up for his one night stand at the college. We stood out in front of the building by a big pile of skids. After we had talked for a while he went and got a tall thermos filled with coffee. It was cold and we drank the coffee with our gloves on under the stars. He'd gone through the dorms at 2:20 and thrown five girls out of the rooms. The boys had complained to the dorm master that he'd invaded their privacy. The dean had arrived. There had been arguments. "What I want to know, is who is going to pay me for all the hours I was up there talking to those guys. I didn't get home until five this morning."

It seems that he had no right in the buildings at all, that actually his jurisdiction stopped at the door. His real job was to prevent off-campus people coming in and vandalizing, to watch for fires, and in the winter time, for frozen burst pipes. The rules he'd
been upholding were the students' self-legislated rules. "I'm no damn baby-sitter," would alternate with, "I'm no damn caretaker." It was all a question of space. If his space included the dorms, he was a baby-sitter and he didn't like that. If it didn't include the dorms, he was a caretaker, and he didn't like that.

He wanted to convert all of his space into securable space. "Ever since I got this job the spics and hippies where I live think I'm a regular cop. No more trouble. I'm going to put a gumball on the roof of my car and install a police radio. I won't have trouble wherever I go."

* * *

Talking with him I was able, little by little, to put together some picture of his world. It was some sort of sphere, in theory. He had been told and had accepted as fact, the earth was a sphere, in theory. But functionally it was no sphere. Distance and direction in his world did not function as they do in my world. Beyond Massachusetts they scarcely functioned at all. "I'm only thirty-seven," he told me, "but I've traveled everywhere. Me and the wife love to travel." I was interested in his travels. "Well, we go out west all the time. We've got a lot of relatives in Springfield and maybe we'll move out there. We go up to Canada sometimes. And Providence and the Cape, of course. We don't go to Boston much. Too big." There seem to be four degrees of southness in his world. Providence, Hartford, New Haven and the stuff between here and there is the first degree of southness. Then there is the New York area. He'd like to visit New York someday. The South is the third degree of southness. Beyond that is all the rest of the world practically. South is essentially a bad direction to be from. The spics come from the south, meaning the Spaniards, Mexicans, Cubans, Philipinos, Puerto Ricans and so on. Most of the world is south of us. The rest is just "far away."

Size is equally hazy. I guess hazy is the wrong word to use, because he does not talk about it hazily. This is the world, and he knows it. There are three big countries in the world: America, Russia and China. All the rest of the countries are about the same size; small. These small countries break up into two classes: Europe and the rest. The rest are small, but dirty, corrupt, and filled with an enormous impoverished population that is flooding into America in horrifying numbers. Europe itself consists of England, France, Italy, Switzerland, Germany, Poland and Sweden "and you seen those women? They know how to put a girl together over there!"
Puerto Rico, which he talked about incessantly, is about the size of Brazil, or South Africa. It is about as far away as any of those places in the south. It is definitely separated from America by water for the Puerto Ricans arrive here by the boatload. He had no idea it was an island until I told him so. It has one city and that's San Juan, a huge city filled with slums and prostitutes and fancy hotels for the Americans "who never see what's really going on." It's about the size of New York or Providence. He knows of one Puerto Rican product and that's Barcardi. He speaks of Barcardi lovingly, particularly the 151 proof, and assures that they take one even stronger. The typical Puerto Rican family includes a good-for-nothing leather-jacketed knife-fighting man, a wife who is not much better, and too many kids who never really know for sure who their real father is, except they're pretty sure it's not who it's supposed to be. "They're not that dumb!" he says. Topographically, Puerto Rico resembles central Massachusetts, mostly hilly with here and there a mountain, and its vegetation is substantially similar to that of central Massachusetts, except for the palm trees. The palm trees are part of the image of Puerto Rico that he picks up in the rum and airline ads, in magazines and on TV. Here he also picks up the climate, which is always warm. This is reinforced by the Puerto Ricans on his street who complain about the winter. "If they don't like our weather, they can go home."

He also talked a lot about Worcester. He grew up just outside Worcester, in Millbury, but his family moved into the city when he entered high school which he didn't quite finish. He still doesn't like books, saying "You can put one in front of me and I won't even open it up. But my girls, they're all big readers. I want them to finish high school, maybe even go on to college... But it'll be a Catholic school. The rest of these schools are just legal cathouses." Worcester is composed of good areas and bad areas, friendly ones and unfriendly ones. He knows them all. The good ones and the friendly ones are where his type live, no jigs, no spics, no foreigners. Some parts are good but unfriendly, the richer parts of town where the houses and all are nice, but "where no one'll even give you the time of day." He speaks about his part of town, Main South, with mingled pride and despair. He won't let you knock him for living there but it's changing so fast he's not sure he can stand it anymore. He refuses to believe that I, too, live in Main South because "what would somebody with your brains live in that crummy part of town for?" Like many Worcesterites he knows the town very well, but in terms of squares and diners and routes in and out of the city, rather than in terms of streets. He is constantly saying things like "I was out at Messier's Diner... you know where that is, don't you?" And when I confess I don't, he can't really tell me where it is, or how to get there, though
he himself would have no trouble. As with the rest of his knowledge of Worcester, the difference between what he can express and what he knows is enormous. He can and does express himself on one aspect of Worcester. It's running downhill fast. There are no jobs and what jobs there are are taken up by longhairs, eggheads, and foreigners who are filling the city rapidly. The air is filled with evil in these forms.

One day he said, "Things are so bad, somebody slipped me a Puerto Rican coin in my change today."

I said, "That's interesting, since they use American money in Puerto Rico. Let's see it." He scratched around in his pocket and finally dredged up a copper coin. "Maybe it's Mexican," I said. It wasn't. It was Burmese.

"Well anyway, it's foreign." He seemed pleased.

* * *

After talking to me for several nights and plying me with coffee and tea and fried chicken in the little shack erected to keep him warm and the building blueprints dry, he caught on to me. As we warmed our toes at the tiny electric heater his company provided, he cocked his head at me, took out his teeth preparatory to "gumming his dinner to death," and said, "You sure do ask a lot of questions. How come?"

So I told him. I told him I was a geographer, a geographer who was interested, not in the world outside, waving my hand in the general direction of the door, but at the world in men's heads, pointing to my head. He handed me a red thermos cup of coffee regular and looked puzzled.

"I'm interested in mental maps," I said. "Look, you used to drive a truck. Say as a child you had gone with your parents to visit relatives in Providence and Boston, and every holiday you'd gone first to Providence and then to Boston and had fallen asleep on the way home. Your father drove, you were full of turkey, why not?" He nodded sagely. "So one day you apply for a job driving a truck and you get the job and first thing you have to take a load to Boston. The guy shouts out to you as you climb in the cab, 'You know the route?' and you tell him 'Sure.'"

"Yeh, I get it. And I get in the truck and head for Providence."
Listen, I know bozoos like that, no joke. I got this friend Pete who every time he comes to my house comes the long way by Lincoln Square. I tell him and I tell him and every time he says, 'Tell it to the wind, Ed, tell it to the wind.'"

"So," I continued, "you know what I'm talking about. You've got the world in your head, all the streets and buildings and smells and diners and climates and good places and bad are up there in your head, and sometimes they match up with what's outside and sometimes they don't. And sometimes you go a place and have to change around what's up there, and lots of times you just add on to it. Well, I'm interested in the maps in your head." I paused, because his eyes had changed and color was rising into his face.

"Hey, wait a minute. I know I haven't had as much schooling as you. I haven't. I admit it. I'm not proud. And I don't know all that much. You know it. I know it. But I know what I know and I'm no dummy."

"So, who said you were?" I asked.

"Then what's it all about? He was wary, maybe even sullen.

"The point's not that I know it all and you don't. That's not it at all. The point is that our mental maps are different. And we each use our mental maps to make our minds up about different things. Like the quickest way to get from here to Auburn, or the way we feel about Puerto Ricans."

"You're not going to try telling me that they're Americans again, are you? We've been there already." He started gumming some meat loaf. His wife really packed a lunch. I explained as best I could in a dozen different ways what I felt was going on. He calmed down and became interested. Even maybe pleased. After all, I was interested in what he thought and that was something novel. The whole mental geography issue struck his fancy and we talked about it from then on, often.

*   *   *

The last time I saw Ed it was raining on the hill. We walked his rounds together. The bare concrete had been covered outside by bricks and inside by wallboard. An empty lot was a hundred bed nursing home. Lights were on inside where the janitors were working late into the night to get everything ready for the first day. Inside looked
nice and warm. Outside it was as cold and wet as ever. It was his last night.

We rounded a corner and I looked at my watch. He smiled and stuck out his hand. I shook it.

"I learned a lot from you," he said, "a lot about Puerto Rico. But I don't care. I still hate those spics. Always will."

I shook my head. He went on. "I want the wife to meet you. We ought to get together and talk sometime." We traded addresses and phone numbers and made promises and shook hands again and said goodbye and I walked off with my dog.

I walked up over the hill through the wet clean grass and once again looked down at Worcester. Spring was coming and under the cold there was a wonderful warmth. I wondered about what he'd said. I wondered if he'd hate them to his grave. I knew I'd never know. We'd never meet again. We had nothing in common but the cold, the wet, and the night.

I walked on home.

II

Well, we did have one other thing in common. We each had views of the world that were like no other. I guess that's something we all have in common. It's even better than fingerprints. You sit around with a guy and nod your head and say, "You know, we really have a lot in common," and the next thing he says is something you can't nod your head about.

Sometimes the things you're nodding your head about are geographic things, where so-and-so is, the quickest way from here to there, how it's so much nicer in Venice than in Rome, the shape of the world, the size of the universe, things like that. Sometimes it's about other things, like who was the greatest shortstop ever in the American League, or who led the better band, Ray Noble or Fletcher Henderson, or how the play was better than the movie and the book better than the play. When you drain all this head-nodding conversation of the hype, the put-on, the show-off, what's left is more or less what you know. What's left is knowledge. And when the conversation is about geographic type things, what's left is geographic knowledge.

Believe it or not, there are guys who study this kind of
geographic knowledge. They don't study the copper output of Brazil or how much it rains in Afghanistan, or why there are steel mills in Cleveland. They study why people, any kind of people (including geographers), think that copper comes from Michigan, that Afghanistan is a tropical rainforest, that Cleveland is a good place for a steel mill. These geographers who study, not geography, but geographic knowledge, don't call themselves geographers. They call themselves geosophers. The word was invented by gentle-hearted John K. Wright, an American geographer, from the roots ge meaning "earth" and sophia meaning "knowledge." According to Wright, geosophy "covers the geographical ideas, both true and false, of all manner of people — not only geographers, but farmers and fishermen, business executives and poets, novelists and painters, Bedouins and Hottentots" (Wright, 1966, 83). That is, it covers the geographic knowledge of everyone. Needless to say, geosophy is a fascinating subject.

Taken by itself in large doses, geosophy can descend pretty rapidly into sterile pedantry. I pointed no fingers, but such, sadly, is the case. It's not without reason, however. Who really gives a care what Joe Blow thinks the world looks like? How interesting is that? By themselves mental images of the world, cognitive representations as some call them, may be interesting, but they are not necessarily so. One thing that is of somewhat greater interest is how these images, these mental pictures, came to look like they do. That is, what is it about the world that lends itself to such an interpretation; and what is it about a man and men that lead them to interpret the world as they do? That is, what is it that happens between a man and the world that results in a certain picture of the world? Some people call the process of seeing "perception" and a small sub-field in geography developed called The Perception School. For a few years it was hard to tell the Perception People from the Geosophers. There was a reason for this, too. For the most part, they were the same people.

But the thing that is the most interesting, is what people do based on their picture of the world. I mean, when you slug a guy you do so for a reason and that reason usually has something to do with your image of him. If your image was that he was a friend, you wouldn't slug him. In this world, actions count, not perceptions or thoughts. You may perceive me as you wish. You may even cognize me and image me as you wish. I could care less. But when you act towards me, then I suddenly care a very great deal. I am happy when you're nice to me (that is, I am happy when I see and believe and care that you're nice to me) and I am upset when you hate me (when I see and believe and care that you hate me) and so on. Actions speak louder than words just as words speak louder than thoughts.
If actions are important, the things that actions are based on, the mental images, are suddenly terribly interesting. And if they're interesting, the things that mental images come from, perceptions, seeings, are also important. Some people refer to these three things, these three processes, as perception (the seeing part of it), cognition (the organization of what was seen into pictures and images) and behavior (the resulting actions). Other people don't think that these are the right words, or the right slices. Personally I could care less. They're just convenient words someone found in the dictionary, and anyhow one thing is clear: I see, I think, I act. Ain't nobody going to take that away from me.

The study of the relations between seeing, thinking and acting as they relate to geographic things is called psychogeography, by me and others, although naturally there are those who call it something else. Psychologists who study the same sort of thing call it environmental psychology. Still other people refer to the whole set of processes as plain perception or even geosophy. What it is called doesn't really matter a great deal, unless a great deal is being made about what it is called. One thing should be clear. Some people study how all three processes interact and others study only one of the processes. I am interested in how the three interact, and I call myself, merely for convenience, of course, a psychogeographer. What you're reading is psychogeography.

III

There is only one problem left. What things are geographic type things and what things aren't? In the following few pages I will give you my answer, but please understand that this is my answer. Frankly I think it's just as good as any other answer, but people have been known to get red in the face about these things and shout and wave their arms violently. On occasions, I too have been guilty of such silliness. But then, people are pretty silly most of the time, aren't they? The whole question may seem entirely stupid to you, but a lot depends on the answer to the question. Like what school you go to. Or what department you're in. Or whether you'll keep your job. In the sort of things that really count in life, like eating, the answer a geographer gives to this question is crucial. Answer wrong, and he may have trouble finding a job and hence not have money to buy food and hence not eat. That such a silly question should have such consequences...

If you're the sort of person who thinks a rock is a rock, then you know what geography is. It's what you studied in the seventh grade about the torrid zone and Pee-Wee with his blow-gun in the Amazon rainforest. Once upon a time this was geography. But, perhaps sadly,
that was a long time ago. Since that time a lot of different sciences have grown up and the world of academia has gotten crowded. The more crowded it got, the more often different sciences found themselves in each other's way. That this has happened fairly recently, in the last hundred and thirty years, can be seen from the fact that the very word "scientist" was invented in 1840 by a man named William Whewell (Mencken, 1937, 559). The thought that a man would make his living studying the sorts of things we study today was laughable before that time. Science was the plaything of the rich and leisured. I don't want to give you the impression that nobody went around defining things to study before then. That wouldn't be true. Men are always defining the life out of things. But when it's a matter of making a living, then things are a little different, particularly when the anthropologists are constantly tripping over the sociologists who are tripping over the urban study people who are tripping over the planners who are tripping over the urban economists who are tripping over and over and over and all of them over the poor geographer who seems to be everywhere at once. It gets pretty funny sometimes, when it isn't so sad you want to cry.

In the 19th century, the distinctions were pretty simple. Geographers studied space, and historians studied time, and the anthropologist studied man, and the physicist studied matter, and so on. There was only one thing wrong with all this. None of these things they all studied so assiduously existed in such simple pure states. The events of the historian took place in space and the space of the geographer somehow was filled with men who were made of matter. The fuzziness of these distinctions was clear to most workers in these fields and yet there didn't seem to be anything they could do about them. Then along came Einstein.

Einstein was a physicist, but the things he discovered about matter were so fundamental that no scientist or philosopher has been able to think the same way since. Einstein said that there was no matter at all. No time. No space. There were only events. Let me try to explain this to you. Think of a meeting. A meeting is when people get together to decide something. When two people meet on the street. An automobile crash is also a meeting.

Now what is a meeting? It is something that happens in time and space. Just think about that. A meeting is always some time. And it is always some place. And it is always some thing. But you can't lift up a meeting. You can't burn a meeting. Obviously a meeting is nothing. But it is something. What is it? Very simply, a meeting is an event, an event in space-time. To see how similar these two ideas, a meeting, and an event in space-time are, think about this. Someone asks you where you're going. You say, "To a meeting of the Sub-
Committee." And that's a perfectly good answer. Now ask me where I'm going. "I'm going to Room 303 of the Greshim Building at 2:00 this afternoon." And that's a perfectly good answer too. It may be an even better answer because it imparts more information. In this case, the word "meeting" is equivalent to "Room 303 of the Greshim Building at 2:00 this afternoon." Not an hour earlier. Then Room 303 was a study hall. Not the next room down, because that's an office. Every single meeting in the world is just as precisely and definitively and uniquely defined by its location in space-time.

The trouble is, all things are events just like meetings. Think about a piece of land and the air above it. What is it? Last year it was an empty field. This year it's a hundred-bed nursing home. Fifty years from now it will be an old crumbly building, a ghost house. A hundred years from now it may be an empty field again. To say what that "space" is, without saying what "time" it is, is meaningless. Of course, most of the time we know what time it is and don't have to say it. Just like most of the time we know where we are and don't have to say that. But if you're traveling and someone asks you where you live, you have to know when he means. "Now I live at the Excelsior; but my real home is in Oshkosh." Where you live is an event in space-time too. Since most of the time we know where and when we are, we aren't used to thinking of things as space-time events. When I now say that you are an event, you're startled and jump back and stare at me like I'm crazy. But I'm not. You are an event.

One of the simple ways to understand this is to try to take away "time" or "space" and see if you're still there. If you are a real thing, independent of "space" and "time," you should be able to take away "space" and still exist, or you should be able to take away "time" and still exist. Try it.

It's an interesting mental exercise, but with no solution. No matter how hard you think, you are still taking up "time" and occupying "space." And obviously, but subtly, you are not independent of "time" and space." In fact, all you really are is a particular location in time-space. A unique location in time-space to be sure, but no less an event for all of your uniqueness.

Another way to get a handle on all of this is to think of geology. Now there's a subject that deals with matter! Rocks and mountains, the basic stuff of the world. So you should study geology. All they talk about is time. The first theorem of geology has to do with time. It says that things were going on in the past much as they are now. And from then on it's ages and eons and little else. In fact, to go back to our meeting for a minute, to a geologist a huge magnificent mountain is an
event as ephemeral, as fleeting, as a two o'clock meeting. Mountains come and mountains go and while they're around they're really something, but still mere events in the panorama of space-time.

No matter, no space, no time, only events, only locations in space-time. The events that Einstein was actually talking about were the tiny events smaller than atoms called sub-atomic particles. Up until his time, physicists had considered these tiny particles the ultimate, enduring substance of the universe. Einstein replaced these tiny particles with events and pointed out that you can collect these events into series of events in just about any way that is convenient. One convenient bundle of events is called matter; another convenient bundle is you; still another is me; still another is mountain. That these bundles are convenient doesn't make one more real than the other. Bertrand Russell says, "Matter is not unchanging substance, but merely a way of grouping events. Some events belong to groups that can be regarded as material things; others, such as light-waves, do not. It is events that are the stuff of the world, and each of them is of brief duration." (Russell, 1945, 70).

Between each event is an interval. Once we would have said that so much "time" had passed between two events, or that so much "space" had been covered. But now we know that it is a space-time interval. Each interval

...Could be analysed in various ways into a time-element and a space-element. The choice between these various ways was arbitrary, and no one of them was theoretically preferable to any other. Given two events A and B, in different regions, it might happen that according to one convention they were simultaneous, according to another, A was earlier than B, and according to yet another, B was earlier than A. No physical facts correspond to these different conventions. (Russell, 1945, 832)

In the example Russell used, the events were in different regions and time varied. He could just as easily have put them in different times and then have noted that according to another convention, A and B were in the same place, and according to another convention, A and B were in different places. He would have still said that no physical facts correspond to these conventions. That is, one instance was no more real than another, just more convenient. What all this boils down to is that whenever we draw a line around something and say that that something is a real substantial thing, we do it because it pleases us to, but the fact that we draw the line around it doesn't make it "real." Or as
Cole Porter put it: "Gibraltar may tumble, the Rockies may crumble, they're only made of clay, but our love is here to stay." Which is the more substantial, love or mountains? Which the more real? Neither. Mere emotion, mere mountain, mere event.

What is and what is not convenient has consequences that must be understood. That mountains and love are equally substantial, equally real things, should not blind us to the fact that it would be inappropriate to act in regard to them in the same manner. It is ordinary to hug and kiss someone you love. Do not try this on a mountain. Hoagy Carmichael sings a song about loving a woman the size of a mountain:

Oh, gee, but ain't it grand to have a girl so big and fat,  
That when you go to hug her, you don't know where you're at,  
You have to take a piece of chalk in your hand  
And hug away and chalk a mark to see where you began,  
One day I was a huggin' and a chalkin' and a chalkin'  
and a huggin' away,  
When I met another fellow with some chalk in his hands,  
A coming around the other side, over the mountain,  
A coming around the other side, over the great divide.

(C. Hayes-K. Goell)

The advice must be well taken: a mountain is not love despite the fact that both are events. The lines we draw around a series of events and provide with a label should have some utility. Depending on the use of the group of events draw the line. Take the following example: You pull a plant from the ground revealing the roots. Distinguishing the roots may have some utility. The group of events called "roots" may be a useful group. But, if you're a soil scientist the distinction between the roots and the surrounding soil not only has little utility but is simply not possible. In fact, the event of greatest interest is the zone where the roots change into soil, the zone of ionic exchange, a zone of furious activity of goings and comings of tiny chemical particles. The group of events called "roots" and "soil" become, not convenient labels, but impediments to understanding. The substantiality of rootness dissolves into a zone of chemical transference. Soil becomes not some dirty substance but a class of chemical events. These are the convenient events to a soil scientist. Events are the substance of the universe, but their labelling and grouping are a function of human utility.

IV

Since the world is composed solely of events, if geographers
study anything at all, they study events. So, obviously, do all other scientists, be they physicists, biologists, chemists, or historians. What we need is a scorecard to tell the players apart, or worse — to tell us what game is being played, or even what ball park we're in. Or do we? Perhaps one of the things I'm trying to suggest is that all scientists study the same thing when you get right down to it and that in a more wonderful world there wouldn't be any departments at all, just curious interesting people. In that world the only way you'd know what someone was doing would be to find out, to read what he'd written, or listen to what he had to say, or look at what he'd drawn or painted or hear him wail on a cool clarinet. Science would be indistinguishable from art which would be life. Sounds dreamy, doesn't it?

Last night I went to the ballet and saw a lot of this confirmed. The Dance Theater of Harlem did George Balachine's Concerto Barocco to the Concerto in D Minor for 2 Violins by Johann Sebastian Bach. I will not attempt to describe what I saw, only to say that if you're interested in geography, in "space," that this ballet will talk to you in clearer, more meaningful tones about "space" than any geography book, including this one. But if we cast this discussion in the event-relation terms introduced above, I can make some of it clear to you. Music consists of events called sounds in relation to one another. In his Concerto, Bach was making profound comments about the possible relations these sound events might have. In ordinary terms these sound events have temporal relations, one succeeding another. In his ballet, Balanchine translates these events into gestures and makes the relations essentially spatial, although given the nature of the world the time element remains. As the dancers moved about on the floor I saw the flows of people in the city streets and the relations of the streets and the sun rise and fall and the day turn into night and a new day start. Maybe I saw these things because I'm a geographer and these things fill my mind. Other people saw other things. The point is a simple one. Bach and Balanchine and the Dance Theater of Harlem and I all were dealing with events and relations between them. That's all there is. The contest of the events was somewhat different in each case. For Bach the events were sounds, for Balanchine the events were gestures, for the dancers they were sweat and teamwork, and for me they were — well, actually for me they were events and relations, but they were events and relations that I could fill in a million ways with the content that most interests me, that content being geographic things. But what are geographic things?

There is only one answer: geographic things are the things of interest to geographers. There is no more profound answer without discovering that everybody is interested in the same thing. James Blaut, a clear-spoken man for a geographer, realized a great deal of this, but
got hung up trying to find a more general, less idiographic answer. His attempt was doomed to fail, because there was no such answer. Before he failed to realize this, he did, however, point out that it was awfully difficult on any ground at all to distinguish between history and ecology and geography:

*History proves to be distinguished from geography strictly on the basis of subject matter (the historian's period is neither more temporal nor less spatial than the geographer's areal integration)... and most parts of macroscopic ecosystem ecology prove to be just geography (or vice versa).* (Blaut, 1962, 6)

But this still doesn't tell us what are geographic events. It only tells us that if there are geographic events that they are hard to tell from historic events and impossible to tell from ecologic events. But this doesn't help us. I can only tell you again, that geography is events of interest to geographers.

And what is of interest to geographers? Mountains high and cool and covered with blue-black pine forests and the endless sheets of baked cracked-earth yellow deserts and a shopping center filled with people loaded down with brown paper bags and children; the empty streets of an old ghost town filled with nothing but tired climate and the pearly dew that covers the grass on a cool clean summer morning and the changing shapes of big red barns filled with hay by sweaty men and the cows that eat the hay and the roads that carry the trucks with the milk and the bright shiny rails of hard cold steel and the trains that ride them even as the wind with their whistles blowing deep, deep into night; the Mexican peasant burning over the sere yellow stubble of his corn fields and the way a city can push its lonely streets out into the country where at night the yellow lights of houses glow every now and then warmly beckoning; and why in one place you pay $200 for the same room that somewhere else goes for $2 and why the sky is blue and the height of the mountains and the size of the cities and the skidrow streets with ancient men of two-day beards that once saw the sheen and gloss of pace and fashion; the changing of the weather day by day, from the arcing heat of a summer noon to the bone-deep chill of a winter night and the wide valleys with their supple sighs and swarming rivers and the unending groan of the great unloaders dipping and lifting their tons of ore against the growl of the furnaces turning out the rivers of molten steel that ride bumper to bumper tail-lights glowing on the great highways of the world.

These things, and more, are of interest to geographers. Geographers want to know where the rivers come from and where they go and why they twist and turn and why some go fast and others slow and why some are clear, so clear and others turgid black. They want to know why you
can cross a line nobody can see and be arrested for different things than on the other side and what a country is and means and why some grow and others shrink. They want to know why some people are comfortable a foot apart chatting over an evening cocktail and yet others not unless twice that distance and why a classroom fills with students the way it does and even if it fills a special way. Geographers want to know the shape of the earth and the depths of the oceans and the width of the rivers and the size of the cities and where the rain goes and what happened to the cotton mills in New England. Geographers want to know the middle of the Gobi Desert and walk the road to Timbuctu and take the cog railway to Dawson and ride down the Amazon in a wood canoe and climb Mount Everest and shake hands with the last stone-age man and take a peek at the Shangri-La in your mind and maybe some day have a hand in building a Shangri-La right here on earth where all men will know good things. These things are of interest to geographers.

I could tell you forever of the things of interest to geographers. One man studied the goldfish industry of Martinsville, Indiana. Another, the shape of space. There is human geography and physical geography and cultural geography and psychogeography and economic geography and political geography and the philosophy of geography and agricultural geography and medical geography and biogeography and cartography and geomorphology and the geography of Asia and England and Arkansas and Topeka. You name it and there's a geography of it and if there isn't we'll make one and I'm glad because we're young and strong and healthy and having a ball. How can I tell you what is of interest to geographers? I can't even say what isn't. Jazz history? Well, it sounds like geography starting off in New Orleans and moving up the river to Kansas City and then up to Chicago and then all over the U.S. and now all over the world so that the Duke goes to Russia and packs the house everywhere he goes. Diffusion of an innovation. You guessed it, it's geography. All I can tell you is to read this. It's geography.

Now we can go back, back to the seeing, thinking, acting. Maybe you think we could have cut out the last few pages, but I don't. There's a lot of stuff there that we're going to need. We now know what the world is made of, events and their relations; we know what events we are especially interested in (I just got finished telling you that) -- geographic events; we know that we are interested in how people perceive these events, because these perceptions get put together in the mind to make images and pictures which form the basis for the actions that affect us. And that affect the geographic events we're interested in and that were perceived in the first place. If this is not all clear, go back. Start over again.
As all is now clear, I want to apply what we've got settled to the story of Ed the cop that I started out with. Ed is a man like most men, and like most men he sees, thinks and acts. These seeings, thinkings and actings are the very whatness of his world. From where he stands they are the very world itself. As psychogeographers, what we want to do is to see his world; to reflect on his world; and then act. In conversation with Ed, I did all these things, my actions usually being more conversation, but also including the acts of going back up and talking to him, and drinking his coffee, and eating his sandwiches. But these were acts of mine as a person alone. As a psychogeographer I want to understand Ed's world as another clue to a more general understanding of everybody's worlds, of everybody's seeing, of everybody's actions; to finally be able to describe some general relations between these processes that hold to a substantial extent for all people. Let's try.

V

I have less information from Ed about his seeing process than about any other. This is a function of nothing but normal conversation. I mean, it's a pain in the neck for both parties if one of them is constantly saying, "Wait a minute, where'd you get that from?" Sometimes he would volunteer information freely. Thus he told me where he got his ideas about the climate of Puerto Rico. They came from two main sources: advertisements for rum and airlines and the remarks of his Puerto Rican neighbors disparaging our winters. Since he doesn't read books, these sorts of sources must provide a great deal of the information he currently receives. Television ads and shows, a few of the glossy national magazines, and the Worcester newspapers augment conversations with people he meets and experiences he physically engages in. At this stage in his life, these last two sources provide a special type of information, since he engages in conversation to any extent with people only very much like himself (or with nuts like me) and engages in experiences of only a limited nature. In his "extensive" travels he has exposed himself to little variety in customs or manners or landscape since he has stayed in southern New England. His sources of information, then, are limited and of a type.

Obviously he has been receiving information for a long time — he is thirty-seven years old. I mean, he grew up. We know that he went to school in Millbury, which is just outside Worcester, and that he actually finished high school in Worcester itself. So these early experiences are also to type. Furthermore, we have it that he didn't like school and is proud, in a rueful sort of way, of his ignorance. He will maintain that "life" is the finest school. Who can argue with that. There can be no question that he has learned more and better from "life" than he did in school. While he will state this explicitly, it can be
inferred from his stories as well. Thus, when the Puerto Ricans began first moving into his neighborhood, he claims to have held them little animus. It was the experiences he had with them that taught him their true worth, i.e. worthlessness.

Frankly, there is little to say about his seeing process, except one instructive fact not noted above. He sees things where others don't. Thus he sees the world as filled with spirits of a hostile nature. Starting with the lawyers, unions, bosses, including the kids, longhairs and punks, going on to embrace the judges, politicians, spics, jigs, deans, and ending up excluding practically no one, his world is animated and hostile. "They're all against me. Everywhere I go they're trying to make me trouble. Everywhere I turn." I suppose that in the sophisticated parlance of today, he should be termed a paranoid of a sort. But it seems to me that this terminology robs his world of much of its comparability. Ed's world is animistic, as was the world of the Greeks and as is the world of the contemporary Zinacantecan. In Ed's world most of the spirits happen to be hostile. How does Ed deal with this situation? He indulges in a bit of modern magic: "Ever since I got this job the spics and the hippies where I live think I'm a regular cop. No more trouble. I'm going to put a gumball on the roof of my car and install a police radio. I won't have trouble wherever I go." Ed keeps the spirits lurking in the corners of his world at bay by scaring them with symbols of authority, much as the Zinacantecan or the Greeks placated them with offerings of one sort or another. But if we fail to understand that he sees these hostile forces lurking in his world, we fail completely to understand his world. Putting a psychological label on it seems to take it out of the world of geographic things. To read Ed correctly these hostile vibrations must be seen as being as palpable as mountains and trees.

* * *

Part of the difficulty of talking about seeing in a vacuum has to do with the fact that Ed has seen nothing in a vacuum for a long time. He sees currently against an old and petrified background of past seeing. These early seeings have been organized into useful images that enable Ed to deal with current experience efficiently. Thus, when Ed sees a black man, he can test this experience against an image composed of past experiences of black men. These images are summed up in his word "jig." A jig is someone who causes trouble, who cannot be trusted, who is going to stab you in the back the second you turn around, and who is generally a great deal larger than Ed. All new experiences of black men (and all men of color not Ed's) now get tagged "jig" and Ed is set to act in regard to them.

We have a great deal of information regarding Ed's picture of
the geographic world, at least as he has been able to tell me about it. I think it would be most unfair, however, to characterize what he has been able to tell me as completely representative of what he knows. His mental picture of the world is richer than he can say. Nonetheless, what he has said provides us with our information about how he has reflected on things seen and how he has organized them into a coherent scheme. In regard to things geographic, I shall call this coherent scheme a mental map. This mental map is some sort of display system in his head. It is certainly not a conventional map-like device, but in that it functions similarly to a map, I shall call it a map. I don't really care what it's cortical manifestation is. When Ed wishes to deal with a geographic thing, like whether or not Puerto Rico is American, or the quickest route from Castle Hill to Auburn, the relevant pieces of information are displayed in his brain. It might be useful to think of a mental map as a board of a trillion little light bulbs. When Ed considers going to Auburn the routes he can choose from light up on his board like a Paris Metro map. Often these routes won't be complete in his mind. On one route there may be a string of lights running out to a certain point and stopping and after a space picking up again. Perhaps there is a red bulb at the end of the strings which tells Ed that once he gets to this point on the road, he will pick up additional information to show him on his way. Some things may run out and have a blue bulb at the end, and this blue bulb says that he will find no additional information here and that if he follows this string there is a good chance of getting lost. Out of all these strings he may select two to compare. Then the board goes dark and only these two roads come back on. A pink light on one may signal heavy traffic, a green light on the other, a speed trap. He looks them over and chooses a route. His action at the end of all this may be to get in his car and go, or it may be simply to disagree with me about the fastest way to go. Of course a mental map probably looks nothing like a board with lights. But it may be a useful way of thinking about a mental map.

These mental maps can display all types of information. Thus there is a mental map containing information about the political geography of the world. My information about political geography is often actually contained in a picture of a map in my mind. That is, I mentally visualize a map of the world like you will find in an Atlas. All the pink countries on this map have something to do with England. But then I've looked at atlases a lot. And this information is probably stored more in the form of a lightboard than a map. There is a mental map of shopping opportunities. I have termed such a map an opportunity surface elsewhere, but it is simply a type of mental map. Much information is probably stored as simple pictures, which are not mapped by the head. Thus a vegetation map of the world likely consists of a file of images of vegetation, each indexed by place and vegetation type. Hilly with trees
will flash a lot of place names; Sudbury will flash a picture; and so on. Regardless of what it actually consists of, since it functions in a map-like manner, I shall consider it a map. All of these mental maps comprise a mental atlas, or cognitive atlas, as Blaut has it (Stea and Wood, 1971, x). All these designations are conveniences and nothing else. This is something we learned earlier. A mental map is nothing but a word I use to talk to you. But I do hope you have some idea of what I mean when I say mental map. Most of the balance of this book will be devoted to a discussion of mental maps.

Having destroyed reality a while back as anything but a convenience, I now need to establish some standards. The shape of the standard world (standard as opposed to real, for both Ed's and my world are equally real) I shall take to be the shape as revealed by a generally respected modern atlas or equivalently produced descriptive device, such as a road map, or surveyor's chart, or floor plan which has proved to be equally useful to a large and diverse group of people. Thus the real road to Boston from Worcester to our hypothetical child in the story goes through Providence; the standard road doesn't. There are some people who would term this standard road the objective road, and others, who believe in a Platonic reality behind our visions of it, who would term it the real road. It may be all these things, but I don't wish to discuss those issues here, and calling it the standard road gets me around the problem. One of the things that we should be on the alert for, is the degree of correspondence between the mental map to the standard map. If at all points the mental map is congruent with the standard map, then the mental image in question is the standard image. The standard image has nothing to do with the consensual image which may be, and which past research has shown to usually be, divergent to a considerable degree from the standard image. The consensual image is that image held by a consensual hunk of the population in question. In this context consensual may mean majority, or plurality, or composed in expressed degrees of all its components. Individual mental images are ordinarily divergent from both the standard image and the consensual image as well. Both these divergences are interesting. Thus we have established three sets of standards:

1. The lowest level and least general is the individual mental image. This may be useful to, and only to, the imaginer.

2. The first integration of these individual images is called the consensual image. It is the image of a consensus of a given population. It can be used to predict or understand the behavior only of the entire population of which it is the consensual image. It is not used by any individual, but rather by the group.
3. The most general of the images is the standard image. It is a higher integration of the lower levels only in that it is created by individuals who are paid by society to set up a standard. This image is universally useful by all those capable of interpreting it (usually reading of map or text). It is the reference to which individuals and groups turn when they reach the limits of the usefulness of their own images. This may be manifested by individual map use, or by a group instance that the standard image be taught in schools or in a variety of other ways.

In Ed's case we have his individual image and the standard image, but lack the consensual image, since no one to date has bothered to find out what it looks like. Thus we shall be able to assess only the divergence of Ed's image from the standard image. If the standard image of the world is that of a sphere but he fails to exhibit this knowledge when he speaks of directions and distances, what does it mean to be aware of something if this awareness has no consequences when it should? It would seem that the operational image that Ed has is one on which he is located in some northern apex. The shape would seem to be somewhat triangular with the greater portion of the world to the south. This triangle curves away from Ed and fades at the edges into nothing. Occupying the bulk of this triangle is the United States of which southern New England takes up the greater part. However the southern part of the triangle is filled with the bulk of the world's people most of which are poor degenerate slobs who dream of moving into Ed's space. The entire space is filled with shadowy hostile shades that threaten Ed constantly. All of the land of this triangle is gently rolling hills with here and there a more monstrous protuberance. It gets hotter throughout the year as you head south and palm trees appear. White people live in the north exclusively and skins darken as you head south. I think we can infer a connection between the climate and skin color. It's not a nice world at all. Even at home he is tormented by the hostility toward him that fills his world.

Ed wants to have a role in the running of this space, and that role has definite and well-articulated parameters. We see this on a small scale in his story of troubles with the kids at the college he guards Friday nights. When he occupies that space he wishes to be supreme and to enforce his overriding understanding of the way things ought to be. He likes the rules that organize the events that take place in his space, but when they are flaunted. He won't be a baby-sitter. But he feels even more belittled when his influence is over only potential fires, and burst pipes. He won't be a care-taker either. Since he realizes that he can't impose his understanding on the world (due to his acknowledged incompetence in many matters) he wishes to see someone who agrees with him in a position to do this. Much of his frustration comes from his growing understanding that people in such positions are not doing what he
wants them to. He respects their influence over events, but disparages what they're doing. Even God has apparently let him down. As this understanding grows, the color of his world gets darker and darker and the light spot becomes more and more his home and that alone. Even here, where the space is under his control, he is experiencing difficulties. Recently he was locked out and though he pounded on the door, due to the fact that his family was in another room and the TV was too loud, they couldn't hear him. In his frustration he hit the door with his shoulder and took it off the door frame. First of all, that is the sort, if not the level, of frustration he feels with his entire world. And secondly, the landlord refused to replace the door unless Ed paid for it. And this underlined the lord in landlord. Even in the space most his own he is not lord.

One of the important aspects of all this is that new geographic information has to fit into this image. When one of his daughters started dating a Thai boy, Ed had to change the Thai from a hostile shade to a human being, forbid his daughter to see the boy, or modify his whole world. He chose the first course of action as easiest. Furthermore, whole portions of his proximate world are closed to him. Many are the parts of Worcester with which Ed will have little to do. His reflective images become filters for all his new experience and against which he contemplates potential action. How close his image of the world is to the consensual image it is impossible to say. But it is miles from the standard image.

* * *

In discussing reflecting we have touched on many of his actions. Without further information, it is difficult to say how much of his hatred of Puerto Ricans is a function of a mental map that politically excludes Puerto Rico from the U.S., and how much results from a generally negative assessment of colored. But whether this is the case or not, Ed certainly uses the foreignness of the Puerto Rican as the major rationale for excising them from his world. If you'll go back you'll see that in bringing up the subject for the first time, he tried to establish his animus as a function of foreignness and not color by noting that he had high-yellow God children. He wanted to make it clear that he was a rational man with a standard view of color. And that being a rational man he could still dislike the Puerto Ricans because of their behavior, which boils down to ingratitude unbecoming a foreigner. Note that he had no animus toward a local foreigner (the guy who took his job) because it would not be rational to get upset about an American "foreigner." If nothing else the divergence between his mental political map and the standard political map provides him with a justification for hatred, a justification that allows him to live with the himself imaged as a Christian.
Another behavior that has a mental map behind it is the decision to move from his street. When he displays his map of Worcester, Main South is negatively evaluated. This is a signal that says "Move." Where will he move? He will display Worcester and evaluate the positively displayed regions in terms of rent, proximity to work, to friends and so on, and make a decision. Then he will act. He will move or not move. The ability to move will relieve some of his frustrations. If there is no opportunity he will re-evaluate his neighborhoods downward adding the label "prison" to it. His frustration will increase. He may break out in hives. I think we can postulate as true (i.e., operational) that his chances to move would increase were he to use the standard map of Worcester in his search rather than his mental images of Worcester space. Of course, in this case he could end up living in space so hostile as to be as bad as not moving. This entire set of Worcester space images is contaminated by the set of images discussed in the above paragraph. That is, his mental map of Worcester incorporates information backed up by his mental political map of the world. Each map in his mental atlas is related to every other map. Extensive revision of any one map involves a revision of the entire atlas. Put yourself in such an editorial position. You will revise any such map with chilling reluctance and only after overwhelming evidence has been presented.

Other actions he engages in that are based on his mental atlas of the world include minute gestures, like swinging his club, or placing his hand on it whenever someone or thing new comes into his immediate field. A world filled with hostile shades will promote this. Other sets of images of space will promote other sorts of behavior, like getting rid of the club altogether. Like getting along with his neighbors. Like going to Boston via Route 9 instead of through Providence. Or in the case of his visiting friend, like not going through Lincoln Square to get to his house. And so on and so on. His mental maps and your mental maps and my mental maps are part of the fabric of our being. They effect and are effected by all our experience. They may well not be things that can be legitimately considered alone, or even relatively alone. Yet at this point it seems to be convenient to do so.

VI

One of the things that Ed never discussed concerned his perception, cognition and behavior with regard to simple distance, direction, shape and size of his immediate Worcester environment. While I was able to begin filling out his mental map of Worcester with all sorts of evaluative attributes I was unable in our friendly conversational context to really get a handle on how he saw the simple things like the shape of the Commons, the shape and direction of Main Street, the extent of the downtown, the edges of the various neighborhoods and so on. It is
a cartographic truism that before you can map attributes, you need a base map on which to place them. And I had no base map for Ed's Worcester. The mental base map is the beginning of psychogeography and it is in this beginning that much of the best psychogeographic work is currently being carried out. It is also where all that is good in psychogeography to date has failed most completely. It is also the major burden of the work in hand to try and establish a method for creating such base maps.

Using Ed as an example, let me show you what I mean. Say I was able in patient conversation to establish how Ed felt about every neighborhood in Worcester, on a variety of scales like like-dislike, beautiful-ugly, clean-dirty, new-old and so on. I could display the results of this investigation in a variety of ways, verbally in prose, or verbally in a table, or graphically on a map. The attractions of the map are manifold. On a map the effects of contiguity, size, shape, and so on can be seen, felt, even analyzed; superimpositions of one map over the other could combine variables and reveal interesting connections. So we map the information, but on what? Is it a justifiable procedure to map individual mental images on the standard map base? Quite clearly it isn't. All the interesting effects we might discover thereby are rendered meaningless, nay libelous, by any divergence between the individual mental base map and the standard base map. Say we map our information on the standard base map and discover that all the beautiful neighborhoods are contiguous. We then repair with our discovery to Ed and say, "How about that. All the neighborhoods you told me were beautiful are right next to each other!" And he looks at you like you were out of your mind. Well, no wonder. On his mental base map each is separated by an unlovely neighborhood. Or he tells you things about streets and you map them on the standard base map and discover that they make a totally connected network. The only problem turns out to be that he wasn't aware that Park and Main intersected, that Chandler and Pleasant intersected, and so on. Then where are you? Absolutely nowhere. And yet this is what every psychogeographer who has found himself in the situation has done.

It's a simple problem of over-reaching and a great deal of the blame for the error must be laid at the door of two early mental map enthusiasts, Peter Gould (Gould, 1966) and Kevin Lynch (Lynch, 1960). Both gentlemen walked into the mental map arena with individual or consensual data plotted on standard base maps. They made it clear what they were doing, but nobody seems to have paid attention to that, and Lynch and Gould were followed into the arena by a host of people who knew too little about the complexity of the problem. Among the offenders I list myself (Wood, 1969; Wood, 1971; Stea and Wood, 1971).

But besides being a simple problem of over-reaching, it turns
out that the creation of a consensual mental base map is hedged in with extraordinary difficulties. These difficulties will be discussed in extenso in the chapters that follow. No advances in psychogeography involving the display of individual or consensual mental maps will be made until the problem of the mental base map is overcome. Psychogeography has not progressed to the point where we can deal with mental atlases at all, not even with single maps in all or even most of their ramifications. This is some sort of goal, or direction in which to go.

Several aspects of the whole question are currently receiving attention, mostly because they are crucial or manageable. Three of these are of particular interest to us. As usual, they overlap in some respects. Their basic differences are methodological. One of these is concerned with questions of development. That is, how do mental maps come to be at all. The people who work with this are most concerned with how simple ideas of the nature of "space" grow in the minds of children, although other people are of some interest as well. If you are interested in this, the best review that has been written is The Development of Spatial Cognition: A Review by Roger Hart and Gary Moore (Hart and Moore, 1971).

Another area of interest has to do with how people map space, particularly urban space. The best review of this is contained here. A third area is involved with assessments of space, or the process by which an adjective, such as "green" comes to be associated with an event (simulated or not) and what it means when an event is labeled "green." Closely allied with this group are people concerned with symbolic and emotional tags, more complex adjectives as it were. The best review of this is to be found in "Environmental Psychology" by Kenneth Craik (Craik, 1970). A good overview of all three of these areas is to be found in Cognitive Mapping: Images of Spatial Environments (Downs and Stea, in press). For a still broader view of what psychogeography has accomplished to date, it is necessary to read Environmental Psychology (Proshansky, Ittleson and Rivlin, 1970) which is a collection of related readings. If you read the four items I have cited above, and the one in your hands, you will know all you can know about psychogeography without actually being a psychogeographer. And you will see how far psychogeography is from the goal I have sketched out above.

The study you are about to read deals with an extremely small piece of the psychogeographic puzzle. A single sentence description of it might easily read: the micro-developmental cognition of urban space in traveling adolescents. The word "micro-developmental" (which I thoroughly detest as a word) tries to imply that the development in question is short-term, specifically, a week. This is to be distinguished from what is ordinarily implied by developmental, where the life of an
organism, or perhaps the so-called formative years, is involved and the process is seen as relatively long-term, from several years up to a lifetime. The term cognition would try to suggest that we were interested in the mental map that was built up to a greater extent than we were interested in the behavioral consequences of this map or the perceptual inputs into the map. I do get into these aspects but in a subsidiary sort of way. By urban space we mean the space of London, Rome and Paris for the most part, although there is some consideration of other cities and other space. Urban space turns out to be mostly landmarks, streets and neighborhoods. Traveling adolescents means thirty-one kids ranging in age from 15 through 19 on a bus in Europe for thirty-five days. Read on.
PART ONE

PREDEPARTURE
In most of the cases with which French had been connected in the course of his long career, the great difficulty had been to find lines of investigation likely to yield profitable clues. Often for weeks at a stretch he had marked time, feeling himself up against a seemingly blank wall, unable to think of any method of approach to his problem which might give him a hint of the truth. In this case, so far at least, it was very different. There were so many avenues to be explored that his greatest difficulty was to decide which was the most promising. During lunch he turned the question over in his mind.

FREEMAN WILLS CROFTS
The Mystery in the Channel
I trust by now that you have gathered that the prolegomena were an attempt to define the field of psychogeography. The word 'field' should be read for what it really is, not a word identical to 'discipline', but rather some sort of poetic metaphor. One imagines fields of waving grasses glossed with flowers of varied hue stretching nearly to the horizon. In these fields of our imaginings we are wont to wander hither and yon, stooping on occasion in elegant grace to pluck a clump of clover, all the while musing self-consciously on the enormity of life. Psychogeography is just such a field as this, and what you have been reading is a description of this field as it might be on one of the finer days of late summer after the bees have wreaked their havoc and the grasses are riot with life beneath the heady summer sun. But psychogeography is now still winter-dormant. What follows might be seen as the first mummerings of spring.

II

The project I am about to describe to you was conceived in its broadest outlines by Robert J. Beck, a psychogeographer, currently in the School of Geography at Clark University. I was in a seminar he was giving jointly with Kenneth Craik and apparently I was performing impressively for one day I ran into Beck in the halls.

"How would you like to go to Europe this summer?" he asked me.

Slightly stunned I replied, "I don't know. What's it about?"
It was rather a bolt from the blue for me as I had scarcely spoken to him prior to this.

"Well, I'll be traveling around with about thirty kids watching them experience Europe for the first time. It ought to be fun." He paused and smiled, "Want to come along?"

"Well, I'd like to know more about it anyhow. Why don't we get together and talk about it sometime." I pulled my watch out of my pocket and made anxious movements.

"O.K.," he said and that was all I heard about it for a month.

*   *   *

I won't bother you with all of the drawn-out agonizing decisions between that first causal encounter and my decision to work with Beck on
the project. It would profit many to read that story, no doubt, but it would also be slightly out of place. At any event the decision was made, and one night I found myself closeted with Beck going over his notes for the project. What he had in hand were two things: a sample, to consist of thirty or so kids who were going to spend thirty-five days rushing madly about Europe, and forty pages of completely whacked-out notes. He had a project all right, but he had it by the tail. It was early March and by July we had to leave and leave ready. I am telling you the history of all this for a reason. If you have ever read a typical report of a scientific venture it reads all cut and dried, as though some guys sat around and came up with some hypotheses, turned them via professional expertise into an experiment, went out and got a sample of people, did the experiment, analyzed the results and brought home the bacon. Well, there actually are some projects that run like this, but I don't know of any. Most seem more like our's. I'd like you to at least get some idea of what can be involved, before you get involved.

Beck's first notes contained the germ of what we were going to do. The experience of the kids was to be seen from three vantage points: before the trip, on, and after the trip. In each of these three slices, four factors were to be investigated: the characteristics of the kids, the characteristics of the group of kids, the characteristics of the tour, and the characteristics of the environments the tour would take the group of kids through. To give you some idea of what Beck thought we might accomplish, let me run through some of his notes on this last factor, the environmental one. In general we were to try to get at a person's comprehension of the total layout and pattern of geographic features, comprehension referring to "cognitive orientation and feelings and values which accompany orientation." (Beck, 1971). We were to try and get at the kids' sense of Europe as a whole, their sense of individual locations (e.g. Rome) including comprehension of geographic properties such as landmarks, natural features, gross patterns of architectural features, city districts, topography, historical locations and points of interest. We were to try and get at their sense of resource locations, such as shopping streets and districts, post-offices, churches, restaurants, theaters and so on, or all those points or events in the environment capable of being exploited as opposed to merely visited. We were to try and get at their experience of all the above in sequence, their comprehension of the connections between places at the scale of Europe as well as within particular locations. Furthermore, we were to try and deal with their comprehension of architectural features, 'Place' for Beck included people and their culture as something distinct from the foregoing. We were to investigate comprehension of three groups of people (children, teenagers, and adults) as to physiognomy, gestures and movements, language, social associations and groupings. We wanted to investigate comprehension of manners, habits, spacings, conversational distances,
bodily contact, as well as the kids' perception of psychological qualities of foreigners such as friendliness, aggressiveness, sincerity, honesty, privacy and ten others. Finally we wanted to investigate comprehension of the things and products of material culture such as money, food, clothing, tools, furniture and so on with respect to design, quality, value and information. Please realize that this is a condensation of several pages of notes about merely one factor to be looked into. All four factors were to be seen in dynamic developmental perspective. From Beck's notes:

The developmental perspective encourages focus on understanding the trip experience in the light of information collected at various spaces and times along the way and is always interested in perceived spatio-temporal organization relative to actual itinerary space and time. (Beck, 1971)

He goes on:

The developmental perspective suggests that early experience is especially crucial in predicting what will follow; that the trip will have stages or phases in terms of a student's psychological relation to his experience; that these stages or phases involve the student's progressive differentiation of the worlds through which he passes. Moreover this way of looking at the problem suggests that the student's experience will be grounded in comparisons, rankings and hierarchies that emerge in his sequential intellectual, emotional, and evaluative appreciation of the many places he will see. (Beck, 1971)

Lest you miss my point with all of this let me point out what all these words, forty pages worth, meant in real life. It meant that Beck had a lot of cool ideas that he wanted to fool around with, with a bunch of kids in Europe. Period.

He really had thoughts of getting physical and psychiatric profiles of the students including knowing about the kids' levels of fatigue, appetite, bowel movements, travel sickness, stomach upsets, headaches, independence, security, frustration, relation to authority, frustration tolerance, moodiness, introversion, detachment, worry, interpersonal relations, exploratory behavior, rebelliousness, exuberance, responsibl-
ity, and adds to all this, in one of his most touching notes, "In relation to the foregoing I would like daily information on the spending of money and writing letters. Changing clothes?"

Maybe you don't get the joke. There were to be only two of us. Two rather ordinary human beings to do all this work.

In the end the joke was on me. We did it.

III

How did we do it? Well, early in March we started locking ourselves in a room with a large blackboard. We'd started out in Beck's office, but the blackboard there wasn't much bigger than this piece of paper and we really needed a lot of space. Big space for big ideas. For the first couple of weeks we just spun out ideas: ideas about the kids, ideas about the four factors, the three time slices, the various sets of endless inter-relationships between these things. We thought about how it had been when we were kids; about how it had been when we traveled; about our experiences of groups. Out of all these thoughts we came up with a model of what was going to happen on the trip. The heart of this model had to do with the ways in which the kids would relate to the European environment: they would experience this environment along a continuum ranging from a complete embrace of the experience to total rejection of it. Where they were on this continuum would relate significantly to the reason they had for coming, which would relate significantly to their "tour personality" which would relate significantly to their general personality. Their "tour personality" would be the personality they manifested on the tour, with regard to themselves and the group. Perhaps a diagram would help:

**FIGURE 1.0 TOUR PERSONALITY**

<table>
<thead>
<tr>
<th>PERSONALITY</th>
<th>TOUR PERSONALITY</th>
<th>REASON FOR GOING</th>
<th>SPACE</th>
<th>MODE OF BEING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypermature</td>
<td>Rangers</td>
<td>&quot;Sightseeing&quot;</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>Mature</td>
<td>Mixers</td>
<td>Sightseeing</td>
<td>Part</td>
<td>Traveling</td>
</tr>
<tr>
<td>Immature</td>
<td>Fixers</td>
<td>Prestige</td>
<td>Little</td>
<td>Residential</td>
</tr>
</tbody>
</table>
As you can see from the diagram, we broke the continuum up into three convenient sections. As we know from the introduction, the fact that these sections are convenient doesn't mean that they're real. They are handy. Since our point of departure for this diagram was tour personality, it will simplify things if I start there.

A Fixer is that tour person who never wanted to go in the first place. If you've traveled at all, you've met him. Upon arising in the morning the Fixer complains of bad sleep and uneasy bowels. He develops diarrhea on the third day which often develops into chronic intestinal complaints. The Fixer complains incessantly about the food, and usually the water. He travels solely so that he can say he's been there. His experience of foreign space is nil because he spends all his time around the hotel, often justified by his needed proximity to a bathroom. His travel mode is residential as a result. His name derives from the fact that he fixes on the hotel upon arrival in the new space and rarely leaves. Often he is acutely homesick and spends a great deal of time writing home: "Wish I were there," only he never writes that since it would destroy his reason for traveling in the first place. Generally speaking, he is an immature person.

At the other end of the continuum is the Ranger. The Ranger has developed an attitude wherein experience is valued because it is educational, or broadening, as they say. As opposed to the Fixer, the Ranger never gets sick despite the fact that he goes out of his way to eat exotic food in exotic locales, often extolling the devine paella to be found in the meanest workingman's dive. He drinks water from the sewers and survives. The Ranger travels to grow through experience, and thus never spends any time anywhere near the hotel. His strategy is to maximize the nature and variety of foreign experiences. He covers the waterfront, as they say. Usually he travels alone or with an absolute minimum of companions. This maximizes the ability to follow through with the unique experience, to end up spending the night in the peasant's hovel, as well as to revel in the delights of the unusual. Companions can interfere with these things. One crab from someone and a rapturous reverie is lost forever; the crowds never get invited for the night. He wants to "sightsee" in the real meaning of the word. He wants to cover all the foreign space and do all the foreign things. He will exploit any mode of behavior. When he writes at all, it's in his journal or quick notes saying: "You've never been here." His name derives from his characteristic operational mode, ranging far and wide in pursuit of the unique and the new. He is, in general, hypermature.

The Mixer is your most common type of traveler. In the Mixer there are opposing tendencies. On the one hand, the Mixer admires the resolution and independence of the Ranger, the incredible
intestinal fortitude of him; on the other hand, he looks wistfully at the safe stability of the Fixer. It seems so reasonable to sit cozily in the lobby and drink Kokes and eat hamburgers and chips...and yet, what a waste of money. That can be done at home. The question for the Mixer is how to combine the safety of the Fixer with the derring-do of the Ranger. The solution, once found, is endlessly satisfying: you move around in small crowds, six or seven in size. This way the experience is apprehended, yet safely buffered. Take a nice Ranger girl in Rome. There she is out in the streets being whistled at. She can ignore it, or capitalize on it. But she must deal with it on her own. The Mixers, in a similar situation, can giggle it out together. Much less demanding. The Fixer, of course, never gets whistled at at all; it's too hard to see her figure buried in that deep lobby chair. The Mixer comes to Europe to sightsee in the ordinary sense of the word, to log famous sights. Asked what happened in Europe, a Mixer says: "We saw St. Paul's, the Coliseum and the Eiffel Tower." The Ranger has seen too much and tries desperately to articulate the impossible ("Such a sensitive girl!"). The Fixer says disparaging things in general. Being a sightseer, the Mixer experiences only selected portions of the foreign space, since only famous portions are truly relevant. The Mixer is the quintessential traveler, neither a lobby-sitter nor a coal-barge rider. The Mixer writes home post-cards saying: "Wish you were here," and means it. The Mixer gets her name by being a good social mixer. Mixing is what a Mixer is best at. Your middle Mixer is your ordinary mature person.

Now, take the whole Fixer-Mixer-Ranger system and watch it through time. For convenience, once again, we divided the time into three portions: pre-departure, trip, and post-trip. Of course, no one knows when these things begin. With the first thought of maybe going? With the deposit on the trip? Packing? Getting in the car to go to the airport? Saying good-bye? Boarding the plane? When does the trip begin? Likewise, when does it end? The night of the "Au Revoir Party"? The final packing? Boarding the plane? Saying good-bye to your new friends? Meeting your parents? Your first night in bed at home? Show-and-tell in school? The reunion ten years later? The fading of the last memory? With death? When does the trip end? No one knows these things. The lines between pre-departure, trip and post-trip are like the lines between Mixers, Fixers and Rangers. There are no such lines. Nonetheless, refer to Figure 1.1.

Let me remind you, at this point, that these are only our initial gropings toward organizing the experience of the trip. What we see in Figure 1.1 is the first real step toward operationalizing Figure 1.0. In the top line our temporal strategy can be read. The way the kids are before going on the trip will predict in some way what will happen on the
trip. After the trip we try to check on what we have learned before and during the trip. These investigations will be in three major areas: first we shall try to assess general personality, whatever that is; we shall try to get a handle on the pre-departure stereotypes of what is coming up; and we shall attempt to understand their modes of cognizing space. Secondly, during the trip we shall monitor the tour personalities; we shall monitor the ways in which expectations and personality select relevant items from the environment and/or change in response to the environment and new experience generally; and finally we shall watch the ways in which they cognize space. Thirdly, in the post-trip phase, we shall check on what we learned earlier and watch for the decay of the impact of the trip, the reassertion of the pre-departure general personality (if it ever went away) and so on. It looked good, but at this stage, three months prior to departure, we really didn't have the foggiest notion of what we'd be doing in the post-trip phase.

At this point we designated these three general areas of investigation (not the three time slices) as follows. We subsumed all the personality and intra-group social issues under the heading "Social." All the perceptual-cognitive problems relating to customs, habits, personalities, et cetera, of the perceived Europeans we labeled "Cultural." All the perceptual-cognitive problems relating to space, the physical environment, we labeled "Spatial." Our project now looked like Figure 1.2.
What have we got in this diagram? We have a point of departure for the creation of methodologies. We now have the things we are investigating running across the block face: the social characteristics of the tour group and its perceptions and cognitions of novel cultures and spaces. The Ranger-Mixer-Fixer trichotomy running along the top of the block allows us to make hypotheses regarding the "whatness" of our investigation. And in all of this the role of time is easily seen. It might be once again profitably noted that the experience of going to Europe in a group cannot be broken down into these little cubes. Experience has a nice way of refusing such glib compartments. Yet they are convenient ways of ordering things, convenient now since they will allow us to proceed to the business of designing appropriate methodologies to investigate—not you will note, the cubes—but rather the unreduced experience itself.

IV

The selection of methodologies at this point was circumscribed by a set of considerations or constraints not to be found in our blocks. This set of constraints had to do with the nature of our sample population. The group of kids we were to be studying had signed up with a national tour organization for a thirty-five day study tour of Europe. A study tour differs from an ordinary tour by virtue of the fact that student participants in a study tour are able to receive credit for the tour from many high schools and colleges. The distinction is a legal one, and a tour organiza-
tion running study tours does so under license from the Civil Aeronautics Board. This license specifies, with limits, the nature and minimum time of the "study" to take place during the tour. A variety of approaches are taken toward "study". It may consist of formal lectures, held in large auditoriums, of talks given by the guide or courier on the tour bus itself, of tapes played over the tour bus PA system and so on. But it was more or less apodictive that the kids themselves, for the greater part, would regard these learning situations as a burden at best. Any increase in this burden could readily make it intolerable, particularly when this burden would fall on one group, and not on other simultaneous groups. Inter-group comparisons would probably lead quickly to the discovery that our group was doing more than other groups and generate revolt and the collapse of the project. So a very serious constraint was time; we had next to none in which to do our study. This realization led to three major decisions:

1. The bulk of the observation of what was going on in Europe would have to be of an anthropological nature. That is, we could be watching, and taking notes, but the kids themselves would be participating in the study only to the extent that they were our subjects.

2. Any tests we came up with would have to be short and snappy, take the minimum amount of time and be capable of being done under any and all circumstances, especially on a moving bus.

3. For every second of time we took from the kids for our study, we would give them something in return. Hopefully, this return would be feedback to the students, to the group, from the study itself. This decision became our over-riding goal in the design of methodologies. It seemed to us that if we could fulfill this goal, the increased "study" burden would not become intolerable.

The consequences of this final decision was major. Up until this point we had been working within a very traditional methodological framework. We would be observers of a process of change and development. We would note change and come to conclusions as to the nature of the process itself. Now, however, we found ourselves considering an approach wherein our own presence and the study itself would be part of what was causing the change. Thus we would be studying an unusual group, a group contaminated by the presence of social scientists. Actually, of course, this is the fate of all social science projects, no
matter how unobtrusive the measure employed. It by nature affects the system under study. This is true of scientifically equipped surveillance aircraft, U-2's for instance. How much more true must it necessarily be in the situation we were contemplating. Imagine one or both of us going on this trip incognito. How long would our cover last? What disastrous consequences would losing our cover have? How could we covertly take the necessary notes? Administer the necessary forms? Not to mention the implicit, but not the less nasty for being implicit, lie involved, the very basic fascist tendency inherent in taking from subjects information without their knowledge and consent. Imagine getting to know someone on the trip really well, but under false pretenses, a confident, a friend (if such is possible under such a situation) before your very eyes transforming himself into an "S" a mere guinea pig. No, it would not do. So we embraced the decision to feed as much back into our group as possible and to do everything we were to do as openly as we could.

A subtle change overtook us at this point in our project design. Where there had been a tendency to refer to the kids as "sample population," "S's," the "sample" and so on (and it was never a confirmed habit), we now found ourselves revolted by the mere thought of such terms. What to call them? Students? To me it sounded too formal, and very likely wide of the mark anyhow. Children? But were they, at age six- or seventeen, in fact children? People? They certainly were that, but the term smacked of a certain equally revolting pretension to goody-goodness that really wasn't in us. I finally opted for plain old "kids" which it turned out, is what they called themselves. Another way of watching this process take place would be to watch the project designation change. At first it was nameless. As we got into our model-building pomposity, it became The Study Trip Assessment Project. At the start of the trip it was called, officially at any rate, the Program in Experiential Learning. But by the end of the trip we called it simply and with no little pride, plain old "Group L," which in the end is what we were.

As a point of clarification, it is now appropriate to explain just what a group is and what it is a part of. During the summer, tour groups send to Europe plane after plane of kids. Each plane holds 250 kids and is termed a "unit." Each week another "unit" leaves New York and starts moving across the Continent. On a given morning, Unit 1 vacates a given set of dormitories. That afternoon Unit 2 moves in. Each unit is broken down into five or six groups, each group constituting a bus-load. The group is the basic tour unit. It is together most of the time and does things for most of the time as a group. Only for certain mass movements, like the plane trip to and from Europe, the crossing from Dover to Ostend, the formal lectures, and so on, is the unit together. Each unit has a unit director, and each group has a courier.
A courier is the person who tells the group what to do, gives directions to the bus driver, provides commentary on the passing scenery and so on.

Each group is, in turn, broken down into home town groups (HT). These HT's consist of a number of kids from the same school or area. Initially an HT is a recruitment unit. Each has a Travel-Counselor, ordinarily a teacher in the home town school who has gotten this group together. If a Travel-Counselor can bring eight kids from his home town with him, he gets to go to Europe for free. Each additional kid the T-C gets, earns him one hundred dollars. For each kid less than eight the T-C has to pay $100. Finally there are the independent registrants, or I-R's. An I-R is a single student who heard of the trip and signed up without going through a Travel-Counselor. Independent-Registrants are assigned to Travel-Counselors, first to beef their home town group up to size, and secondly to provide each I-R with a responsible adult to function as guardian and disciplinarian. It is a paramilitary organization.

Let me summarize once again this structure:

1. At the top are units consisting of 250 or so tourists. Each unit is broken up into

2. Groups. Groups are led by couriers and consist of 40-50 kids, or one bus-load. Each group is broken up into

3. Home-town groups, or H-T's. Each H-T is led by a T-C (Travel-Counselor). Any H-T may contain Independent Registrants, or I-R's.

This was the second of our constraints. The first constraint had to do with the peripatetic nature and small amount of time the students would be willing to put into our project. This led to serious decisions about the nature of potential methodologies as described above. The second constraint, the paramilitary structure, had consequences as serious as the time constraint. This time the consequences related, not to the creation of investigative schedules, but rather to the phenomenon under investigation to begin with. Typically an investigator of group behavior wants his group to be free to develop according to the group's own inner dynamics. Obviously that was not to be the case on this tour. The behavior of the group and of individuals within the group had minutely described regulations set forth in a series of Travel-Counselor and Courier manuals, including a set of consequences for unsanctioned behavior that ran the gamut from a first warning, to being sent home from Europe at the parent's additional expense. These could be invoked and apparently had been invoked in the past whenever behavior wandered
too far from the established norms.

Another consideration had to do with the demographic composition of the group. The pre-dominant sex to travel to Europe on such tours is the female. In Group L, there were twenty-three girls and eight boys. This is not your traditional experimentally designed group. Given the option to balance the group sexually, we made a second major decision.

We realized that there was no hope for the ordinary carefully controlled experiment. So we abandoned it entirely. Experience is seldom, if ever, a matter of balances in sex, age, background, or location. In a given group there are more boys than girls, more urban backgrounds than rural, more Easterners than Westerners, more whites than blacks and so on. Since this is the real and ordinary situation, why not study that? Why not accept the reality of a group of kids going to Europe on a summer study program and forget about elegant (but unrealistic) experimental designs. Likewise a group ordinarily develops within a set of very real constraints and sanctions. How many classrooms, factories, families, neighborhoods are run without sanctions, threats, go-to-bed-right-aways, and so on? Only in experimentally designed sessions are these sorts of things minimized. So we accepted all of that as well. While we were accepting things, we accepted the standard itinerary and the standard set of pre-planned experiences and lectures until we were in the position of accepting the whole program for what it was — anticipating and accepting everything that happened on the trip, whatever it was, including our part in it. That is, we accepted the fact that this was to be an ordinary tour group with a couple of social scientists along for the ride, or in other words, a very unusual group after all. And the bigger our commitment to feeding back to the students equivalent value for value received, the more unusual our situation became. And we accepted that for what it was too. In sum, we accepted the whole situation as it came to us with no tinkering and we accepted our own roles within this. We were no longer monitors of behavior at all.

Nor were we about to delude ourselves that we were to be participant observers, whatever that is supposed to mean. Our roles were not any longer those of participants and observers alone, but rather participants and sensitizers, for we came to see that what we could give back to the kids that would be of greatest value, would be an awareness of what they were doing as we saw it. Thus if we saw certain sub-groups developing within Group L it would be our role to bring this fact to the group attention. And hang the possibility that this would change the dynamics of it all. We could give best what we were best. We could give our insights as to who they were and where they were going. We would
become, in effect, a group consciousness.

Somewhere I hear a murmur from my readers, or maybe it's my old mind whispering, whispering, "But is it still science?" Well, I asked myself that question when we took the plunge and Beck asked it and we talked about it. After the fact, it's easy to say, but way back then it seemed sort of daring. Yes, it's still science. It's science purged of sham and pretense, and, purged of those, it may be better science than ever. Why? For two simple reasons:

1. Because in the first place objectivity in an endeavour like ours, distance, unobtrusive measures, mere observation and the whole bag, are merely ideas some people have had about the way science ought to be, and not the way they have ever been. Think about the anatomist studying the human body. How can he ever learn about what's going on in there without hacking his bloody way in? He can't. But with the very first cut, the organism is changed and finds itself in a new state. It may be well and good to use cadavers, but they present a drawback; they are not living organisms. A cadaver is a good place to study decomposition and some of the grosser features of the human body, but not to get into what is going on. That involves cutting. Or take an anthropologist wandering up some tropical river to visit a stone-age tribe. The mere sight of a new man (dressed yet!) causes changes untold in a social organization, not to mention the subsequent coming of cameras, recorders, and usually money. How can you study these things — how can you study anything — without changing them? We go to the moon to study it and worry endlessly about exchanging new viruses and really changing things. I will not document this failure of the sciences to achieve their much desired and never found objectivity, unobtrusiveness, distance. It is sufficiently well documented elsewhere, in the physical sciences as well as the social, though most exemplary breast-beating is done by the anthropologists. (See, if you must, Evans-Pritchard, 1962, 109-129; Webb, Campbell, Schwartz and Sechrest, 1966, v-viii, et passim; Lewis, 1970, 3-34; Redfield, 1956, 5-22; Cancian, 1965, 186-204; Harvey, 1969, 321-325.) Physics, the most "objective" of all the sciences, has formulated this inability to observe without affecting the observed in what is generally
known as Heisenberg's uncertainty principle. George Gamow illustrates the affect of this by showing the impossibility of measuring the temperature of a cup of coffee with a thermometer, because the thermometer takes up so much heat from the coffee that the temperature of the coffee read is much lower than it would have been had the thermometer not been introduced into the coffee at all (Gamow, 1958, 312). Suffice it to say that in all science, observation effects the observed no matter what. All one can do in these circumstances is accept this fact, and try to account for it. It does no good to pretend it isn't there.

2. The second reason for believing that it might be much better science takes the first reason a bit farther. If observational distance cannot be avoided, if it must be accounted for, can it not be capitalized upon? In other words, instead of hanging back and pretending we were not there and thus never really be certain of our input, why not make our input as loud and as obvious as possible and know, more or less, what we've done? And observe, then, the effects of our inputs in addition to, or maybe rather than, the system as it supposedly was prior to our coming? This is what we decided to do, and this decision allowed us to proceed with the task of designing a methodology.

Let me summarize the methodological parameters we had built for ourselves:

1. Our tests would have to be snappy and painless.

2. Much of our data collecting would have to be purely observational.

3. There would be constant feedback to the kids about what we learned.

4. Everything would be out in the open.

5. The experience would benefit us all (kids and us) mutually equally.
6. We would accept everything that happened — intended or otherwise — as relevant information.

V

With this set of precepts to guide us we could now go back to Figure 1.2 and try to design approaches that would get us into the kids' perceptions, cognitions and actions vis-a-vis the physical layout of Europe. Back to the blackboard. By mid-May we had come up with six specific approaches.

1. We designed a questionnaire to be mailed to the kids prior to their departure for Europe. This questionnaire was designed to get a handle on their general personality but as it related specifically to the anticipated experience of traveling in Europe. It was mailed out in two parts and was called "Europe on Your Mind."

2. We decided, under pressure, not to ask the kids questions about their relations with one another. It was felt that this could be divisive and could not be chanced. Consequently we decided to note systematically such intra-group patterns as we could. Two of these were rigorously pursued. Every time the bus filled with kids, we noted exactly what seat they took on a bus seating chart. Sometimes the kids filled this form out themselves. The results are impressive. They were also a gas during the trip itself as sub-bus-cultures developed and changed. We also noted who roomed with whom. To some extent this was a function of room size and courier hasslement. Most of the time the kids slept with whomever they pleased, subject to division by sex, of course. We noted sporadically who ate with whom and who wandered around with whom. After two weeks we knew that the bus seating charts told us all this eventually, but it was nice to be sure.

3. Beck and I kept a series of running notes on each of the kids individually and later by groups as they developed and came apart. These notes provided a check on what we were seeing as well as what the kids were up to. When requested these notes were read to the kids, who then agreed with our assessments, disagreed and/or provided new information. We had decided to keep these notes as sort of a catchall coverage of everything
afoot. You can find running lists of sicknesses in here and stories told and anecdotes and so on. They were, and were meant to be, anything but systematic, but as comprehensive as time, eyes, ears and energy would allow.

4. To cover the cultural realm we invented our least reliable device. It went out to the students prior to the trip under the name "Stereotypes Go Both Ways." It resulted from a strange set of ultimately conflicting impulses. Beck and I both accepted the facts that the kids had images of each of the European countries they were to visit, and that these images where composed of, or could be disaggregated into, a variety of parts. In any event it was felt that the various countries could be ranked and compared along a given set of variables. I objected strenuously to any sort of simple ranking problem of the sort where one country must inevitably be ranked above or below another, the sort of approach where you are asked to rank seven countries as to friendliness. What if you felt that all were equal? So our simplest ranking exercise took the form of a matrix as wide as it was tall. One of the problems with this (maybe it was a virtue) was that the matrix was often perceived as a field and countries were scattered about in this field without apparent regard for the axes. This may not, on analysis, turn out to be a problem at all, but it looks like one to me now. We called this exercise the Rank Matrix.

But we also wanted the countries to be compared as well as ranked, and invented a schedule called the Stereo Matrix. Unfortunately, it's too complicated. It takes too long to do. It violates one of our parameters, that the tasks be snappy. The Stereo Matrix not only wasn't snappy; it tended to induce nausea in girls on buses in Europe, which turned out to mean that we got very few hits on the Stereo Matrix. On our pretests it took forever to fill out the exercise, but we could do it rapidly. So stupidly, we went with it anyhow. That was dumb. It was maybe the dumbest thing we did on the entire project. In the complete exercise there were seven Rank Matrices and seven Stereo Matrices. At top speed it took forty-five minutes to fill out. To do a conscientious job took a lot longer.

What they were supposed to do was to give us some idea of how the kids' stereotypes were changing as they actually experienced the
typed country. We ended up with four complete sets (i.e., including all seven rank and all seven stereo matrices): a pre-departure look, and three in trip. Not bad I suppose, and we'll be getting another post-trip set to round it all out, so...

5. We used two devices to get some idea of how the kids were handling the physical space of Europe. One of these was Kenneth Craik's Landscape Adjective Checklist. This test worked out very well, probably because it was short and sweet and hence fulfilled an important methodological criterion.

6. Our second spatial measure will be the basis for the rest of this report and thus discussion of this is deferred until the next chapter. At this point I will say only that it involved teaching a map language to the kids and having them draw maps regularly in Europe.

These were the methods we came up with. The results from most of these approaches will not be discussed in this report except in general terms, and hence, no theoretical background has been laid for using any of them nor have histories of the problems being investigated been sketched. It is nonetheless vital to see the mapping question which we'll be discussing at endless length within the context of the whole project as we conceived of it.

When we first began sending all these instruments out in an endless stream of packages to thirty-one kids and six Travel-Counselors, I didn't know of anyone who didn't think we weren't shooting for the moon. I mean, we hadn't even met these kids! Why should they fill out our forms? And so many! And so long! What did we think we were doing! You know the refrain. Go ahead...sing it.

We just sat back with our fingers crossed and waited.

VI

Before moving on into the problem of the maps, I want to make sure you understand where this project is and what its underlying assumptions are. The basic underlying assumption is that there is a field to be entered called psychogeography and that in this field there are rare and beautiful flowers never before seen except by a half-crocked poet. Some of these flowers are seeing flowers and others are thinking flowers and still others are acting flowers. Our joy is not to pick the flowers and hold them up to the light and let the sun illuminate some glorious petal. Our joy is to see the flowers where they grow in the field.
To see it all together. But we have yet to enter the field and now we look at it from afar. Insects and dust filter the sunlight into a hazy gold. This filter through which we see the field is a developmental one. There are other filters, but this one serves. Nothing is immutable, and all is changing and our particular filter focuses on this changing and growing and dying. It is also our joy to believe that we shall never understand this field, but see it only with greater and greater clarity, even once in it; and once there we shall become part of the field and that it will be changed by our presence. In coming to see the field more clearly we come to see ourselves more clearly and by our presence the field itself is increasingly clarified. There will be here no tearing off of petals nor uprooting of flowers, unless we would be so uprooted and torn. This is our particular journey.

Perhaps you fail to see the drawing of maps in a room in Rome as a flower? Choose your own metaphor. This is a psycho-geographic project using a developmental approach. In this, all that transpires is accepted as real, as valid, as information. It is an exercise in obtrusive measures, in which subjects and observers, we and the kids are equal participants, in which we all go home with the ball.
He stood at the foot of the bed and looked at me with solemn eyes. I sat on the side of the bed and looked at him with whatever kind of eyes I had at the time. We did this for nearly three minutes.

I used part of the time measuring the distance between us, figuring out how, by throwing my body back on the bed and turning on my hip, I could get my heels in his face if he jumped me. He was too close for me to pull the gun. I had just finished this mental map-making when he spoke:

"That lousy ring wasn't worth no grand. I did swell to get two centuries for it."

"Sit down and tell me about it."

...DASHIELL HAMMETT
Red Harvest
Nothing is so eventual in character as experience. All experience is comprised of a series of events taking place in space and time. As should be clear, the psychogeographic problem is to learn how these events are apprehended, mentally processed and acted upon. As we learned from Bertrand Russell, these space-time events have relations called "intervals" which can be broken down arbitrarily into a space component and a time component. In terms of a study tour experience, these arbitrary components may be seen as the itinerary, or temporal sequence of events, and the map, or the spatial field in which the itinerary is imbedded. As we shall come to see, these distinctions are often purely arbitrary, lacking even the slightest shred of utility. Nevertheless, for our present purposes of discussing the methodology which forms the crux of Project Group L, the distinction is at least temporarily useful and will be pursued.

Itinerary and map may be usefully imaged as the warp and woof of the fabric of our life, or more particularly, of our summer tour. One of the values of this image is that both the warp and woof are substantial threads, but threads that create a fabric only when inextricably combined. Take the warp from the fabric and you are left with a skein of threads, nothing more, and yet in weaving, the warp is set out on the loom first, by itself, without a single woof thread, held in place by the loom. Subsequently the shuttle carries the woof thread back and forth across the warp creating a fabric. The warp is the spatial context in which the shuttle of a summer tourist weaves the woof of his itinerary. In the process of weaving, or traveling, the warp and woof disappear and a fabric takes its place. Refering once again to the Introduction, we know that this warp, this skein of spatial threads, is the individual mental map. Furthermore, we must realize that as the fabric is woven, as the shuttle of the tourist carries the woof of time over and under the warp of space, of the mental map, this map is changed constantly by new events, new experiences. The research problem is simply stated: how to discover the initial shape and character of the warp, and then to observe it constantly changing in response to time, to new events, new experiences.

Since the spatial component of eventual experience has often been conceived or imaged as a map, it is perhaps not surprising that the map has become the principal medium for the study of this component of experience. In the long run this may come to be seen as less than satisfactory, but we are not in the long run yet. Now the investigation of maps seems to hold great promise. What I'd like to do at this point
is run through a history of this activity as it has developed, principally in the last decade. That way, you'll see where we are and where we're bound.

In the Introduction we described three types of maps: first, there was the individual mental map; second, there was the consensual image, the consensual mental map, combining the images of a given group of people; finally, there was the standard map, or that map generally useful to anyone capable of reading it. I now want to describe this trio of map types in slightly different terms, beginning with the individual mental map.

Up to this point, this individual mental map has been something in a person's head, some cortical ordering of information of essentially unknown nature. This entity has been called by a variety of names: spatial representation (Shemyakin, 1962, 190), cognitive representation (Hart and Moore, 1971, 2), cognitive map (Blaut, McCleary and Blaut, 1970, passim), mental map (Gould, 1966, 1 et passim), spatial image (Gould, 1966, 1) and so on. These terms describe the internal representation of space as understood by the authors in question. The variety of terms has resulted from a desire to distinguish the size and nature of the internally represented space. The foregoing terms refer either to space in general (whatever that is) or to small spaces (on some unspecified scale). To refer to the internal representations "specifically of large-scale environments" they generate another set of terms: imaginary map, field map, cognitive map, schema, and the entirely cumbersome and ultimately misleading topographical representation (Hart and Moore, 1971, 45). Here topographical "clearly refers to... the physical environment," though why this should be so is never made clear. In any event, none of these terms were meant to describe the external representation of space made by individuals on pieces of paper or drawn in the sand or otherwise manifested, as in, for example, drawings and paintings and photographs and movies and the like, not to mention verbal descriptions and the like.

Clearly there are two basic types of individual spatial representations: internal and external, the internal of unknown character, basically inferred from some external manifestations. The question arises as to whether my other two classes of maps, the consensual image and the standard map, likewise have internal and external representations. For the time being we shall say yes, noting that the internal manifestation of the consensual image is what allows a person to recognize an external image as his own, the same applying to the standard map: the internal representation of a standard map is that which allows a person to accept the standard map as useful. Let us make a chart of these things:
### FIGURE 2.0 MAP TYPES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>EXTERNAL</th>
<th>INTERNAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>INDIVIDUAL MENTAL MAP</td>
<td>1. That external manifestation of the internal representation in the form of sketches, drawings et cetera.</td>
<td>1. That material in a person's head relating in any way to the spatial component of experience.</td>
</tr>
<tr>
<td>CONSENSUAL MAP</td>
<td>2. That map revealing a consensus of behavior, attitudes, beliefs, regarding space among a specified group and compiled from (1) above or other sources.</td>
<td>2. That material in a person's head which allows him to find an external consensual image personally useful or relevant.</td>
</tr>
<tr>
<td>STANDARD MAP</td>
<td>3. That map universally regarded as useful at a given point in time and space.</td>
<td>3. That material in a person's head allowing him to find a standard map personally useful or relevant</td>
</tr>
</tbody>
</table>

**THREAD ONE: THE STANDARD MAP**

The standard map is what we are used to calling a map. It can be acquired at any gas station free or purchased in book stores or found bound in atlases. One reason for calling this a standard map rather than a map of the real world has to do with the historical evolution of this particular type of map. Had you gone into a book store three or four hundred years ago to purchase such a map, you would have obtained a map that bears little, and in some regards no, relation to the same sort of map today. Maps have changed as man's relations to his world have changed.

What does this mean? First of all it implies that whatever the real world may look like, the way in which we represent it, is a function of the way in which we see it. At different times, men have seen the world in drastically different ways — thus a standard map of the eighth century shows a world unrecognizable in the twentieth. Our arrogance makes us say that in the eighth century people were ignorant and did not know what the world looked like. That today we do. But what will men be saying about us two hundred years from today? It doesn't do to be complacent about these things.
To drive this point home examine three images of the world.

Figure 2.1 Image Number One

Figure 2.2 Image Number Two
All claim to be maps of the world, of that entity called earth. At a given time each had claims for being the true map. Can you tell which was made first? Can you guess when each was made?

Figure 2.1 is an "Orbis Terrarum" of the Romans. This map of the world as the Romans saw it (Raisz, 1962, 4), was probably drawn in the second or third century, A.D. Figure 2.2, drawn sixteen or seventeen centuries later, is called the "Islands and Continents of Mankind." It is the brainchild of William Bunge (Warren et alia, 1971, cover). Bunge's point in drawing this map is a good one. He feels that the majority of maps of the world show the wrong things, like mountains, rivers, and so on. His is a map of the people of the earth. But we know that selection of events from the environment is part of the overall thing we're studying in psychogeography. What is it about a man that drives him to map the world in terms of people? What is it about the world that drives a man to map it in terms of people?

The third map shows Martin Waldseemüller's 1507 map of the world (Raisz, 1962, 7). Of the three maps shown, this is probably closest to what we think of as being a map of the world, and yet, what a strange place is America! All three figures are standard maps of the same place, earth. It is hard to believe that, looking at them.

This all adds up to one very simple thing: standard maps are mental maps after all. They are not individual mental maps, but
consensual mental maps; the group for which they represent the consensual image is very large. The Roman "Orbis Terrarum" is similar in all but some fine details to the consensual image of the world held by the Greeks in Homer's day (Brown, 1949, 22-24; Dicks, 1970, 27-39) and by literate Europeans during the Middle Ages (Brown, 1949, 81-113). Obviously, the Orbis Terrarum was the consensual image for an enormous number of people for a long, long time. The image of the world in Waldseemuller's map is, in everything but details, the consensual view of the world of a majority of the people who read maps today: that is, they would recognize it as an image of the world.

From these three examples alone we see that standard maps of the world have varied drastically through history. Were further examples of standard maps to be examined, commencing with the maps of primitive peoples and moving on through the maps of the ancients and so on up to today, and covering perspectives not exclusively Western, the variations would appear even far more drastic. The study of these varying images of the world has been to date the province of study of a field called the history of cartography. Obviously there are at least two ways to approach the variations in standard maps that have taken place over time. One of them is to assume the existence of a real and relatively unchanging world external to the map-maker and to study the degree to which a given standard map approaches veridicality in its portrayal. The study of the history of cartography has followed this road (see, for examples: Wright, 1924; Brown, 1949; Tooley, 1949; Skelton, 1952; Lynam, 1953; et cetera). Of course, none of these authors have anywhere alluded to the second assumption that is necessary to make in their position; that since there is no way to compare their maps directly with the real world they assume to exist, they must compare them to a standard map, or image, of the world. What standard do they use? Naturally they use as standard the latest image of the world emanating from their own culture and time. This image of the world they assume to be as veridical as the state of the art allows and hence for all practical purposes, really real. Aside from the obvious ethnocentricity implied by their choice, it also reveals a profound lack of awareness of their own discoveries; none of the maps in their purview have proved to be ultimately successful representations of the world. What, then, gives them the license to assume relative infallibility for the images of their own time?

Further, there appears to have been a profound lack of awareness on the part of historians of cartography that the map is a cultural artifact, a thing produced by and for, an integral part of, a culture. If we discard the real world assumption and accept the various images of the world, not as steps forward, toward our definitive image of the world, nor yet as steps backwards during "dark ages," but as culturally
satisfying and relevant world views, all equally valid in a given cultural context, we can emerge from the antiquarian sterility of the history of cartography into the light of psychogeography and discover that **STANDARD MAPS ARE MENTAL MAPS**.

There are only mental maps and nothing but mental maps. The difference, as we have had occasion to note, lies simply in the degree of consensuality. A man might draw a map of the world which no one else will admit as a map of the world. Yet this cartographer can find the map personally useful. On the other hand a map might be made which all men can find useful. This last is conveniently called a standard map, while the first remains a personal map. The degree of usefulness says absolutely nothing about veridicality. As will be seen subsequently, personal maps change through time, obviously over a lifespan, but also during a week. The history of cartography shows clearly that standard maps change through time, not only as a result of exploration and change in instrumentation, but also with changes in cultural outlook and need.

The study of the history of cartography has played a minor role in the development of psychogeography. Overtly it has played no role whatsoever, though this will change. Covertly it has had a much greater influence. John K. Wright, inventor of geosophy, was deeply interested in the history of cartography. Maps formed one of the primary datum for his *Geographical Lore in the Time of the Crusades* (Wright, 1925) and *Early Topographical Maps* (Wright, 1924), while his monograph *The Leardo Map of the World, 1452 or 1453* (Wright, 1928) placed him in the mainstream of the history of cartography. Martyn Bowden overstates his case when he claims that Wright showed by this time (1928) that "the history of cartography was more than the antiquarian study it had been generally considered..." (Bowden, 1970, 397). In fact, Wright was solidly on the antiquarian side of the issue. The remarks quoted by Bowden himself make this clear, as Wright at this point still sees the differences between early cartography and ours as "errors" to be tracked down and eliminated through the progress of the ages. Actually it is not until "Map Makers are Human" (Wright, 1942) that we begin to see the geosopher emerge and the beginning of the end of antiquarianism in the study history of cartography. As Wright's influence on the direction and conception of psychogeography via geosophy is enormous, so too, his involvement in the history of cartography had enormous influence on his invention of geosophy.

Our second example of the covert role of the history of cartography in psychogeography lies in "Appendix A" of Kevin Lynch's *Image of the City* (Lynch, 1960). Lynch is concerned with primitive mapping systems and, although most of his information is drawn from anthropology, anthropology is whence most historians draw their information about
primitive cartography. Here are no less than twenty-six references to primitive maps. Lynch is searching for clues regarding environmental images, and naturally he finds early cartography, or more precisely, non-mainstream non-Western cartography, filled with them. His role in the inception of psychogeography cannot be minimized (see Wood, 1971) nor can the role of this particular appendix be slighted. In an anthology of psychogeographic readings entitled *Cognitive Mapping: Images of Man's Spatial Environment* (Stea and Downs, 1972), of all of Lynch's work only Appendix A has been included.

In summary, the study of the history of cartography has in fact played a highly formative though covert role in the work of the precursors of psychogeography. It should also be noted that the history of cartography should be a central concern of psychogeography, and that, when it is, it will be sheer dynamite.

**THREAD TWO: THE CONSENSUAL MAP**

The second thread in the history of using maps to investigate the spatial component of eventual experience is more a study in public relations than anything else. As is true daily on Madison Avenue, some campaigns make it, while others do not. The reasons for failure are many, but the most common is that of coming before the times are ripe for whatever it is you're selling. Another, addressing the wrong audience.

The career of John E. Dornbach exemplifies both reasons. Who has ever heard of John E. Dornbach? More to the point, how many remember a paper he delivered at the Pittsburgh meeting of the Association of American Geographers? A paper entitled "The Mental Map?" In 1959. The date is interesting. It comes a year before Kevin Lynch hit the market with *The Image of the City* (Lynch, 1960). It comes seven years before Peter Gould's "On Mental Maps* (Gould, 1966). "The Mental Map" is probably the earliest effort in geography and its most closely allied fields to deal explicitly with the mental map per se. Titles, of course, can be misleading. In this case the title is to the point. Dornbach deals in his paper with essentially what I am dealing with in this report, with mental images that people hold of the spatial relations of things. He discusses these images for sighted and blind and moves on from this point to discuss the relevance of the mental map to the cartographer involved with the design of standard maps. "The Mental Map" is loaded with insight.

So why isn't Dornbach's name sung in praise? He came too early — the world simply was not ready to listen to what he had to say. It would not be ready for another three or four years. He also addressed
his remarks to the very worst audience in all of geography, particularly given what he had to say. In 1959 cartographers were still embedded in a somnambulistic world of Leroy lettering and negative scribing. The thrust of Dornbach's argument was too simple: drafting is fine, but the maps are not getting the message across. Rather than disturb their tidy, if expanding, universe, cartographers found it more convenient to ignore him.

Nonetheless Erwin Raisz, in the revised edition of his cartography text, tossed Dornbach a bone; a footnote citing "The Mental Map" and two paragraphs of text. Raisz got Dornbach's point loud and clear, but made no effort to modify his point of view when it came to the design of maps:

When we explain to a stranger how to get to the railway station, we translate into words the map which is in our minds. We are likely to accompany our words with gestures similar to drawing a map...The map was formed by personal experience synthesizing hundreds of impressions of distances, directions, turns and landmarks into a mental image. There are big differences between people in their ability to form mental maps...When we have to form a mental map of large regions mostly outside our experience, the process is more complex. (Raisz, 1962, 112)

The mental map point is made loudly and clearly, in 1962! That makes Raisz a pioneer in his own right, for no one but Lynch and Dornbach beat him to the punch. Why isn't Raisz's name sung to the skies? Probably for the same reason that Dornbach's wasn't, although the emphasis is different. The time was almost ripe, but the people taking up the scent were not reading cartography texts.

The crushing blow is that if you were interested in mental maps in 1963, you could read as much about them as a child of seven or eight as you could a professional geographer. In 1963, Susan Marsh came out with a children's book called All About Maps. She opens her discussion of maps with a few well chosen words on mental images: "We all have maps in our heads" (Marsh, 1963, 1). It was all here, beginning with Dornbach. Yet nothing happened. It was too early and addressed to the wrong audiences.

BUT, in 1960 The Image of the City had hit the reviewers' desks. The history of this book will be detailed in the following section. Suffice it to say that it made a splash in the right pond. The ripples are
still washing up to shore. Many took up Lynch's lead and work on mental images was in the air. Then, in 1966, John K. Wright's Human Nature in Geography: Fourteen Papers, 1925-1965 made his work on geosophy widely available for the first time. The growing number of Wright admirers saw connections between mental maps and geosophy. "Perception" was everywhere. The air was rife with a new view. The time was right.

In this atmosphere in 1966 Peter Gould came out with a discussion paper, On Mental Maps (Gould, 1966). It created a stir that has yet to die down. Gould was alot luckier than Dornbach, for Gould had impact. Not so much as a result of anything inherent in the work itself, but rather as a function of its title and its appearance at a certain point in time. Peter Gould is an amazing example of the fortuitous in the academic world. For a few years his name was on all lips. What did Gould do? Saarinen's summary is adequate:

Samples of students from different universities were asked to provide rank order listings of their preferences for states of the United States, countries in Europe, and administrative districts within certain African countries. The scores derived from a principal components analysis of these data were used to construct maps which reflect relative residential desirability of various areas. (Saarinen, 1969, 22)

The maps constructed by Gould were displayed in endless number in his discussion paper. Figure 2.4 shows a typical Gouldian map. It looks alot like a weather map, and in his text Gould exploits this similarity, speaking of highs and lows over various areas. What it actually shows is the residential preference of a group of college students.

Although in his text Gould no where refers to these maps as mental maps, that is just what many people took them to be. But everybody realized that a mental map was something people had in their heads. Therefore, the map had to be maps people carried around in their heads, i.e. mental maps. It seemed that Gould had been able to open heads and see what was inside and show us. For a couple of years everybody made Gouldian maps, thinking that these were mental maps. Sad to say, no one had read Gould, and the confusion as to whether a mental map was a Gouldian map or something inside a person's head became increasingly acute.

The confusion became so acute that in 1971 Roger Hart and
Gary Moore moved to set the record straight:

Another area of research closely allied to the (non-formal and non-structural components of space), is that on environmental dispositions and preferences. Unfortunately, this latter area was at one time entitled "mental maps" (e.g. Gould, 1966), thus causing others to believe it a part of spatial cognition.

(Hart and Moore, 1971, 4)

Thus, neatly, do Hart and Moore excise Gould from the field of spatial cognition. While it is possible to sympathize with their anguish over the confusion, it is impossible to sympathize with their actions. Gould was, and is, solidly in the field of spatial cognition, and that is where he belongs. The problem is simple, and revolves around the internal-external distinction raised in the beginning of this chapter, as well as a more complicated confusion over the nature of space itself. What was Gould talking about anyhow?

In his preliminary discussion, Gould obviously referred to individual internal representations of space:

Figure 2.4  A Gouldian Image (Gould, 1966)
We know so very little about the spatial images, the mental maps, that are in the minds of men. We know even less about how they are formed, the degree to which they are unique or general, and the way they impinge upon, and are reflected in the decisions that men make. (Gould, 1966, 1)

Just what did Gould mean when he used the word "spatial?" He makes this quite clear in an extended discussion in his original essay (Gould, 1966, 4-6). He discusses the sorts of components making up his space: "Thus, the political, social, cultural and economic values held by a man blend into an overall image about the space around him, an image whose components may be particular to him or held in common by many" (Gould, 1966, 4-5). He makes explicit the fact that his concern is with space containing more than distance, size, shape and direction: "For example, Tobler explicitly raised the question of the mental images that people have of their environment, but his basic concern was for the mental transformations of distances that people make" (page 5). Gould's concern is with much more. He bewails the narrow outlook of the psychologists, noting that "the psychologists in their concern for 'perception,' have barely touched upon the investigation of mental pictures of geographic space" (page 6), adding that even Piaget's work "does not deal with the essentially geographic images that children hold or the way they learn about them" (page 7). He might have also noted the minuscule size of the sample and the unusual conditions under which most psychological work has been conducted. Gould was interested in space, not the form and structure of space alone, but with the experience of space, of mythical conceptions far more wide-reaching than Cassirer (Cassirer, 1944), with the content of space, the meanings and values assigned to space, and so on. Basically, Gould was interested in the cognition of space. Gould was a psychogeographer and one of the very first.

It is possible that Gould is not concerned with the cognition of space? Hart and Moore think so. Obviously the disagreement concerns the definition of the cognition of space. For Hart and Moore, and the psychologists of whom they are so enamoured, cognition of space refers exclusively to the form and structure of space, to the abilities to judge distances, sizes, shapes, and directions. And in a vacuum, as though these abilities were somehow pure and untainted by emotions and feelings and beliefs, and, yes, even preferences; as though space was no thing but some abstract medium; as though Hart and Moore operate in the space of the nineteenth century, pervaded by universal ether; as though Einstein had never lived. Cognition of space for them is laboratory sterile, untrammeled by love and hate and fear and security. Since they
are unfortunately good in their area of competence, I must consider their review somewhat dangerous and insidious in its timid, clean and parochial outlook on space, and in its nasty references to "lay definitions."

In the field of spatial cognition, Gould's work is important. He was among the first to construct consensual images of space, the first to deal with the variable of preference, and the first to use verbal information to do so. He also used the quantitatively most sophisticated technique that has been focused on the problem. His major contribution was to point out that there are things, concepts, attitudes, and beliefs bearing on the cognition of space that are of themselves non-spatial in character, and to show at least one profitable way to go about investigating them. In the construction of an exciting psychogeography, his methods show promise of great power and greater excitement.

His sin, if such is the proper turn of phrase, was to not explicitly point out that the consensual images displaying his results were not individual mental maps. Some sin. It is a common ploy to throw the burden of explanation on the author, but communication is a two-way street. There is an equal burden of understanding thrown upon the reader. If an author has the responsibility of writing as clearly as possible, a reader has an equal responsibility to read as carefully as possible. Both are arts requiring great effort. Gould's readers abdicated their responsibility. His sin was their sin and their's alone.

THREAD THREE: THE INDIVIDUAL MENTAL MAP

There are other threads than the three I shall discuss, but they play many tangential roles and bear little fruit today. They are dealt with adequately by Hart and Moore, Saarinen, Craik and others. Included in this category is the early work of Muchow and Muchow, Trowbridge, and so on.

What we wish to deal with here is the flood of work that appeared subsequent to the publication of Kevin Lynch's The Image of the City. Lynch followed much the same approach as Gould, publishing his work in 1960. It was not a narrowly circulated discussion paper, but an attractively packaged hardback aggressively marketed. It remains the most widely read work in the various fields of mental mapping, perception of the environment, and the cognition of space. Its impact has been enormous, not only because of its availability but also because the techniques Lynch used to construct his consensual maps were simple to master (nothing at all like Gould's principal components analysis) and, further, he used as his basic data a magical substance: individually generated sketch maps. The magic of the ensemble was potent indeed.
His followers embrace the diverse fields of geography, psychology, sociology, architecture, education, and planning. It is primarily because of his work that psychogeography exists today. While his motives and aims are interesting, they have been exhaustively dealt with elsewhere (Krim, 1968; Wood, 1971), and here only a fleeting glimpse will be tossed in their direction.

Krim, in a fascinating paper, places Lynch in three contexts: artist, planner and geographer. As an artist, Krim claims that Lynch is essentially a philosophic disciple of Frank Lloyd Wright, under whom he served shortly as an apprentice. Krim positions Lynch as a planner in the mainstream of Renaissance rationalism leavened with a little Romantic pragmatism. In this vein Krim makes a trenchant observation:

Either because no American city is in Europe, or because no American city was founded during the late Roman Empire, the American planning profession has developed a disdain for its own urban environment which manifests itself in such concepts as "urban renewal," a horror of suburban development, commercial activity, expressways and television antennas. (Krim, 1968, 4)

It is certainly out of this disdain, or as I have called it, fear, that The Image of the City resulted (Wood, 1971, 38-45, and 211-220). Lynch was interested in showing misfits between what people need/want and what they get in the American city today. His method for discovering these misfits was beautifully adapted to his problem, but as we shall see, the misfits could very easily have arisen, not from any real misfit, but as a result of his method.

Basically what he suggested doing was as follows: collect a representative sample of the city population and set them the task of describing the city. Although Lynch used a variety of descriptive techniques (drawing maps, answering questions, giving directions, photo recognition tests, walks through the city recording the conversation, and so on) it was the drawing of the maps that was most exciting, and it was the drawing of the maps that was so appealing to others. These sketches were the magical mental map...maybe.

After collecting all this information, Lynch subjected it to a form of content analysis, and in The Image of the City displayed the results of this analysis in two consensual images, one from the verbal information and the other from the sketch maps. Using these maps as data, Lynch proceeded to discuss the problems of orientation, navigation and symbolization in the organization of three American cities; to
show how they could be "cleaned up" to resemble the more ideal city of clarity and light perfected during the Italian Renaissance. In our framework his maps were consensual maps compiled onto a standard base map using verbal descriptions and external representations of individual internal mental maps. The difference between his work and that of Gould hinged, first, on the use of content analysis instead of the more laborious principal components analysis, and, second, in that he supplemented his verbal manifestations with sketch maps. This latter was the most important for future work.

![Figure 2.5 A Lynchian Image (Lynch, 1960)](image)

Lynch's method for collecting and analyzing maps was never fully explained in The Image of the City, but, after all, he wasn't writing a research manual. Nonetheless, the problem that was to plague all future dabblers in the area was apparent from the beginning. The study of personal maps breaks down into two methodological problems: 1) The manner in which they are collected, i.e. drawn; and 2) The manner in which they are analyzed. The real problem is that the second stage of investigation is inextricably chained to the first. Both parts of the problem merit detailed exposition.

Put yourself for a moment in the position of a concerned social scientist asking a group of people without not only prior disposition but prior practice to draw a map of as complex an entity as a large American city. What do you ask them to do? You do what Kevin Lynch did, you ask them to draw a map. Period. You don't really know what you're looking for. You want the maps to be as free as possible. You carefully
monitor the way in which the maps are drawn, noting the sequence in which the elements of the map appear on the paper. And you end up with an incredible array of maps drawn in every conceivable manner and style, drawn with every conceivable degree of detail, generalized according to any number of personally satisfying systems, and personalized to either potential extreme.

In the beginning stage of an unknown research journey, such an approach is a great aid in the formulation of research routes. Faced with the range of produced maps, it becomes possible to ask meaningful questions: Are there an infinitude, or merely a few, personal mapping strategies? Are maps projective psychological tests alone, or are they also communication channels for information about the environment? Or both? Which side of the issue, the psychological or the geographic, is more interesting to an investigator, and which is most fruitfully pursued using the mapping technique? From the beginning there are any number of such questions that might be asked, and depending on the answers, new approaches to the question of map collection will be formulated. You might think that that would have been what happened, but you'd be wrong: that's not what happened at all. Without being overly critical of others in the field, it is impossible to be honest and accurate without noting that subsequent researchers held fiercely to what seems to be best characterized as the sacred-cowness of the freely drawn map. A list of these researchers is very long, and continues to grow longer (de Jonge, 1962; Gulick, 1963; Saarinen, 1964, Carr, 1965; Dart and Pradham, 1967; Saarinen, 1967; Shelton, 1967; Dowd and Faido, 1968; Eaton and Lawrence, 1968; Gittens, 1968; Lennon, 1968; Orleans, 1968; Rand, 1968; Stea, 1968; Appleyard, 1969a; Appleyard, 1969b; Blaut and Stea, 1969; Garside and Soergal, 1969; Porteous, 1969; Stea, 1969; Wood, 1969; Appleyard, 1970; Ladd, 1970; Blaut and Stea, 1971; Wood, 1971; Beck, Cohen, Craik, Dwyer, McCleary, and Wapner, in press; Francescato and Mebane, in press; Stea and Wood, in press).

To participate in a typical mapping session is an education for the instructions are usually as follows: "Please draw me a map of the City." Those are the usual instructions, and to questions from the mappers as to more exactly what is required, the response is always and inevitably, "Those are the entire instructions; please draw me a map of the City." These instructions are nearly uniform regardless of whether the investigator is concerned with attributes of the environment (imagibility, complexity, legibility, social character, existence of centers, neighborhoods, what have you) or with attributes of the subjects in the traditional psychological sense).

Let's see what is happening at this point on the other side of the instructions. I would ask you to put yourself in the position of a ninth
grade Mexican boy, or a thirty year old Boston matron, or an under-
graduate at Clark University. None of you have ever drawn a map before,
and quite possibly you've not drawn anything at all since seventh grade
art class, if you were so lucky. Faced with a blank sheet of paper, a
pencil and the vast complexity of some specified environment, how do you
proceed? First of all, how is your confidence about drawing anything?
Do you draw a line or two and then sigh that since you never could draw at
all, how can you map? And hand your paper in mostly blank? Or do you
proceed to draw a main street, add a couple of cross streets, put in a
couple of landmarks, and then — "Oh, my! I've forgotten all of the
Neighborhood which goes in there between...but I don't have room..."
and start to struggle valiantly with the eraser on the end of the pencil?
Or do you exert yourself desperately only to be crushed in the end by
problems of varying scale ("This part is bigger than it should be.") or
inadequate symbolism ("I couldn't think of a symbol for the Building, so
I left it off.") or orientation ("I never could figure out where north was,
so think the map is o.k., but you may have to turn it.") or any of the
endless problems that confront and often baffle even the professional
cartographer? Any of these responses may be of interest to a given
investigator, but I can think of only one meaningful research program
which could be interested in all of these responses, and that would be one
designed to investigate the problems confronting the average human being
trying to draw a map, and no such program has ever been undertaken.

What is our hypothetical, but all too real, investigator
investigating with this approach to the drawing of maps: drawing inequali-
ties among the sample population? Body images? On-the-spot symbol
creation? Varying abilities and strategies in dealing with scale? What?
Certainly this is not the ideal way of collecting maps as a way of getting at
the environment, since there are too many extraneous variables between
the environment and the map! In support of this, I would draw your
attention to the infrequency with which the actual drawn maps of such
instructed subjects are reproduced. I have reproduced a couple (Wood,
1971, 76) to illustrate the difficulty inherent in analyzing them, but there
are few such instances in the bulk of the literature dealing with freely
drawn maps. The major exception to this generalization is provided by
those dealing with young children, who are wont to reproduce maps in
endless quantities, secure in the fact that the youngsters drew maps at all!
(For example, see Dart and Pradham; Hart, 1971; Ladd, 1970; Muir and
Blaut, 1969-70).

How does one deal with endless variety? What single analytic
technique is capable of extracting information from the entire various
range? Well, frankly, there is no such technique. Long, and still
favored by some, is the original technique employed by Lynch, content
analysis. Unfortunately, this technique is quintessentially of a verbal
character and must of its nature ignore the cartographic problems of map creation. It is incapable of dealing with anything but the content as non-spatial phenomena. It cannot deal with questions of orientation, veridicality of location (relative or absolute), scale variation, degree of connectivity of mapped parts, questions of simple direction or distance, and so on. It is scarcely capable of handling content in an interesting manner. (An exhaustive treatment of the insufficiency of content analysis as a technique for dealing with maps is provided in Wood, 1971, Chapter II.) The major analytic efforts of another group of researchers in the area have been to categorize their array of maps into a variety of more or less internally consistent groups (especially Appleyard, 1969b; Appleyard, 1970; Ladd, 1970; but the first hint of this is in Lynch, 1960, Appendix B). These researchers have been unable to proceed interestingly beyond this point for the simple reason that the free drawing of maps has left them with a real paucity of data, relative to anything but the mappers themselves. The attempts to apply metrics to freely drawn maps have been either highly speculative (Stea, 1969a; Stea, 1969b; Stea, 1969c; Blaut and Stea, 1971), or sporadic and ultimately fruitless (Stea, 1968; Blaut and stea, 1969; Lee, 1970; and Beck, Cohen, Craik, Dwyer, McCleary and Wapner, in press), not because of a lack of effort on the investigator's parts, but because of the liabilities of the freely drawn map.

The central problem for the geographer concerned with seeing the world through a lens not his own, that is, through maps drawn by real people, has been the nature of the methodology employed in eliciting maps. All of the problems of analysis follow hard on the heels of the collection technique. My interest, as should be clear, is to see the world as communicated to me by others; to see the world as it is rotating in the mind of the beholder; to see the shape of our glorious globe, not as the astronauts see it, but as it is seen by that vast majority of people living and breathing out there who will have no opportunity to see the earth from eight miles high. This mental world cannot be communicated to me as long as the channels for communication remain blocked, choked, with the extraneous matters of shyness, drawing inadequacies, motor skill inabilities, lack of symbols, unawareness of the problems of scale and all the rest of the pitfalls befalling the human being faced with the world, a blank sheet of paper and a pencil.

*   *   *

Such is the history of the utilization of maps in the investigation of the spatial component of eventual experience. It is a short history, in its bulk not much over a dozen years old, and in its greatest extent, not quite making it back into the last century. For all of its shortcomings the work sketched out in our three threads indicates something: a new
focus is being attempted. If nothing else, that is heartening.

And where do we go from here? In many directions.

III

If you will for a moment recall Chapter I, you will remember that there were six instruments designed for the Group L Project, of which two dealt with the spatial component of the trip experience. One of these was Kenneth Craik's Landscape Adjective Checklist. The other was what we ended up calling Environmental A, a mapping language that could be taught to our Group L kids and one which we hoped might obviate or seriously reduce some of the problems associated with the freely drawn map.

Environmental A was born in the room that Beck and I had locked ourselves into. Realizing that the utilization of freely drawn maps was out of the question (frankly, I had refused to analyse a single one), Beck and I sat and drew maps and invited others to come in and draw maps for us. We sat and noted the stage at which our maps soured. Let me give you an example. Beck has spent considerable time in London. He commenced mapping with Heathrow Airport, locating the airport at the left extremity of the sheet of paper. The road coming into London from the airport was a single thin line covering half the greatest length of the paper. At the termination of this line, Beck found himself deep in London, in fact at Russell Square. Although, given the scale representing the airport and the road from it, Russell Square should have been scarcely larger than a dot, it occupied a square inch. Proceeding from Russell Square through Trafalgar, Piccadilly and Leicester Square, Beck found himself drawing a bridge crossing the Thames. As this bridge increased in length I glanced up from the paper to Beck's face. It was obvious that he was no longer in the same room with me; he was on this bridge crossing the Thames. The Thames was beneath him and it was a huge river and it seemed an eternity before the bridge ended. At the scale of the airport road, this bridge was some ten miles long, yet at the Trafalgar Square scale the bridge wasn't sufficiently long to cross the Thames. Furthermore, the terminus of the bridge brought Beck to the other edge of the paper. Intriguingly, he had been able to include only half of London on his sheet.

Beck's attempt at drawing a map of London was not at all atypical of people faced with the task of drawing large areas. What typical problems have we just met? 1) The initial orienting figure is drawn against a blank background. With nothing to gauge it against for scale, it becomes the scale-setter for the rest of the map. Whether a major street or a central landmark, it is frequently drawn too large.
2) The effect of the traveling pencil is somewhat hypnotic. That is, once a person has set a pencil in motion he is loath to stop. Thus the bridge over the Thames continues in sheer joy of moving the pencil on the paper. 3) The mapper becomes lost in only part of the problem. Thus Beck, drawing the airport road and the bridge, was immersed in the problem of drawing these two figures. He has forgotten temporarily the overall objective of a map of London. Other problems in subsequent mappings became immediately apparent. 4) Fear of making mistakes in the city at large caused mappers to concentrate on the area best known, usually around the home, place of work, or hotel when traveling. No mistakes in the small area thus mapped was considered preferable to mistakes on a map of the larger area specified. 5) Shifts in scale as drastic as those described were responsible for much of the symbol inconsistency. Thus Beck's airport road was a single line, whereas his bridge consisted of two parallel lines, as did the streets connecting the squares. 6) Corrections were easier to make when building the map from the center out rather than from the edges in. 7) Attempts at connecting landmarks over short distances were more likely to succeed than were attempts to connect landmarks over longer distances. 8) People feel map symbols to be sacred and unknowable and hesitate to desecrate the map surface with unusual symbols. "And that was all you recall of Paris?" "Oh, no! There were a lot of parks and churches." "Well, why didn't you include them?" "Well, I don't know how to show a park." 9) Symbols used by people tend to be unique to the mapper. Among the handful of experimental mappers investigated there was a wide range of symbols used for even such simple things as streets. Without asking, it was in many cases impossible to guess the nature of the item symbolized. 10) Once a mapper is satisfied with his beginning, there is a tendency to load the map with detailed information. The map surface becomes cluttered, difficult to interpret and impossible for the mapper to change should correction be discovered necessary.

We set out to systematically devise a method of creating a sketch map that could be used by the kids on the tour which would get us around the ten difficulties listed above. To take the last point first, we decided to avoid the problem of cluttering by dividing the mapping operation into parts. On a sheet of white paper the mapper would draw the skeleton of his map, the basic network of communication channels. Additional information was to be added, not directly on this skeleton, but rather on separate sheets of tracing paper. Thus not only did the mapper avoid the cluttering problem, but for purposes of analysis the map could be peeled into layers like an onion and analyzed layer by layer. That problem out of the way, we turned our attention to the remaining issues.

Since so many of the issues dealt with the problem of the first marks made, it was this issue that we tackled first. We realized
immediately that the entire problem revolved around the issue of scale and it was borne in upon us that we should, if possible, alert our mappers to the difficulties involved with scale. The only thing that seemed intelligent to us was to instruct the kids in the art of drawing maps. Obviously this instruction would have to take place prior to departure for Europe so that once there, no time would be lost with trials and errors. Thus it was that we settled on teaching the kids how to make maps. This decision made many of the following easier. Once in the position of instructors we could alert the kids not only to the problem of scale, but to others as well. Actually it dawned upon us that we could teach them a mapping language in its entirety.

Our experiments, as well as the entire literature on the collection of personal maps, convinced us that the first mark on the paper should be as inconsequential as possible. Obviously one should commence mapping with a dot. The location of this first dot was the second item on the agenda. We were thoroughly convinced that better maps resulted when working from the center to the edge, so the first dot must therefore be placed in the center of the page. Now what? Still worried by the potentially disastrous effect of drawing lines we felt that it would be judicious for the mappers to locate the terminus of any line before proceeding to draw the line itself. This would rob line drawing of most of its hypnotic effect. At this point we commenced drawing maps ourselves. We discovered that it took serious will-power to place a dot, place a second dot, and then connect them with the line. I found that at the first wavering of attention that I would commence with a dot, draw a line, and add a dot at the end so as to conform with the appearance of the act, if not with the act itself. Others asked to draw maps in a similar fashion experienced similar difficulties. However it became apparent that part of this difficulty resulted from the nature of the environment being drawn. Thus people drawing familiar environments experienced great difficulty in using the approach, whereas the same people sketching less well-known environments experienced substantially less difficulty. Since our kids were going to be mapping unknown places, we decided that we were on the right track.

We prepared and reproduced a set of simple instructions for using the system. Mappers were to commence mapping with a dot, representing the center of the environment in question (the definition of this location was dealt with subsequently), and were to place this dot in the center of the paper. They were to transport themselves mentally to this spot and attempt to visualize a landmark not too distant from this spot. Considering carefully the question of scale, and fully aware that this first line would in some way determine the scale of all that they would later draw, they were asked to locate a second dot, and connect the two dots with lines. They were to then repeat the operation, commencing from
The establishment of points in space may be for emotional or spiritual associations with pre-existing monuments or structures. Equally they may be points of production in regional economy, or centers of social regeneration in blighted areas. The concept of connecting these points by channels of energy, or lines of force, as demonstrated in the lower Klee drawing, may not only create an aesthetic physical entity but produce an awareness of the structural relation of functions in what appeared to be a chaotic distribution of independent functions (upper diagram).

Both the aesthetic design entity and the concept of a system of functional interrelationships are manifestations of the same underlying order, and the integration of the two is required if we are to solve contemporary problems on an urban scale. The fashion in contemporary architectural and planning thought of separating them by a "no-man's-land" to assure their continued individual identity has meant serious damage to efforts to solve the problems of the modern city.

Figure 2.6 Text and drawings from Bacon, 1967, 125. Drawings after Paul Klee.
either dot, and they were to continue repeating the operation until the map was completed to the mapper's satisfaction. They were permitted to add additional sorts of information (such as regions and areas of one sort or another) only after this point-line network was completed. Each point was to be identified and all the lines were to be numbered. In this way we could recreate the sequence in which the map had been created. Furthermore it was felt that if the instructions explicitly recognized the possibility of error, or at least of an insufficiency of knowledge, mappers would be less anxious and less distraught when faced with a portion of the environment unknown and hence unmappable. Thus it was that we decided to include instructions covering this eventuality. Question marks were to be used whenever the length or bearing of a given street was unknown or when the actual position of a given landmark was open to doubt. This pilot system was administered to a couple of groups with resounding success and completion of the entire scheme required only a symbol system with which to decorate the tracing paper overlays.

Varieties of map symbol systems were consulted and, utilizing the best of them with additions of our own, we completed our symbol system in short order. The entire mapping language was tested and pronounced a success. The materials were organized into mailings for the kids on the tour and the first results to return convinced us that we had in fact overcome many of the difficulties involved in drawing freehand maps. The relevant materials are included in the body of the text as the following chapter. So critical is an understanding of their nature that it is hoped that these materials will not be skipped by the anxious reader.

Two issues remain to be considered. The first has to do with the definition of the location of that point first to be placed on the piece of paper. One of the main objectives of the system was to eliminate the possibility of drawing egocentric or domocentric maps. We were less interested in the kids' viewpoint of the world than in some way assessing their knowledge of it, particularly as it may well be true that egocentric and domocentric maps are a function of an unwillingness to make mistakes rather than a function of egocentric or domocentric personalities. Consequently, we have not sought maps of their world (probably centered on their own home) but of the world (centered on some sort of consensual node). The distinction is not so appalling. Most residents of a given city are likely to agree on a city center. For example, the center of Worcester is the Commons, City Hall, or Worcester Center. Of course these differences are interesting, and likely revealing, but they are all sufficiently close to be equally valid. The issue is, of course, far from closed, but considerable evidence toward resolving the issue is provided by our experiences with the kids in Europe, and will be presented further on. Suffice it to say that our system as presented in the following
One problem remains, and while it has been discussed in the previous chapter, I would like to review it here. The question is what in fact we are studying? The paucity of instructions that has traditionally been associated with this sort of work ("Draw me a map," did in fact have some sort of rationale. This had to do with the issue of development versus education. The assumption was that the minimum of instruction would result in the most meaningful data. Thus when the question was "Draw me a map of the center of the city," it was hoped that by not detailing what was meant by "the center of the city," it would be possible to learn what the mappers, as opposed to the investigator, held to be the city center. Wishing to keep investigator bias to a minimum, instructions were minimized. Unfortunately with the lack of instructions, particularly regarding the means of mapping, mappers have had so many problems as to render much such data difficult to use, if not entirely useless. Consequently, we decided to focus on education: could we, by teaching the kids this mapping system, enhance their ability to navigate in the foreign spaces they were about to encounter? Thus, instead of using an instrument designed to register changes in levels of comprehension and integration, we found ourselves employing an instrument designed to teach and differentiate. This is what, reassuringly, we said out loud to each other. Deep inside we still harbored the suspicion that it would also be possible to learn a great deal about their untutored development in handling novel environments. The outcome, as will be seen, proved that our deeper intuitions were, in point of fact, well founded.

In this chapter we have briefly examined the history of the use of maps to investigate the involvement of man and space with one another. We discussed three types of maps (standard, consensual, and individual), and noted that for each type there was an internal and an external manifestation. It was shown what sort of role the investigation of the history of standard maps has played to date, and the hope expressed that this role will be expanding. It was also shown that standard maps are not pictures of the real world, but rather highly consensual mental maps. Consensual maps of the model pioneered by Peter Gould were then examined. These maps employed verbal data, but obviously there is a whole range of other sorts of data that could profitably be exploited in this way. The work of Kevin Lynch was dealt with in the section on individual mental maps. This was done, not because Lynch's final product was easy to distinguish from Gould's, but rather because he was the first to employ individually generated sketch maps as base data. The work of his followers and the liabilities of the method they utilized was gone into as well.
Finally we presented a short discussion of our attempts to overcome these liabilities.

But all this is only part of a larger whole, both conceptually and actually as part of the Group L Project. I would finally return to the image of the loom, where warp and woof are woven into this fabric called life. This image is scarcely original with me. At the root of many mythologic approaches to the ordering of life stand a trio of weavers. These weavers stand as the ultimate foundations of life, more powerful than any God. Sometimes, rather than weavers, they were more simply spinners of threads subsequently woven into life. The Greeks called them the Moirae, the Romans the Parcae, the Norse the Norns. The Norns were named individually Urdhr (present), Verdandi (past) and Skuld (future). And such was fate.

But what is fate? "1. The supposed force, principle, or power that predetermines events. 2. The inevitable event or events predestined by this force" (American Heritage Dictionary, 1969, 478). And so we return to the event, the weaving together of space and time into an unalterable fabric, into an unalterable existence, into being. In the light of this, then, let us not forget what our maps are showing us. They are showing us fate, event, not space at all. For as the Greeks and the Norse and we as well must know, there is no space alone, but only space in time inextricably woven together. The zero-grade root in Indo-European for the word "fate" is bha-, and its meaning is simple; to admit (American Heritage Dictionary, 1969, 1508). And what is there to admit? Well, that's up to you in the end, but I offer a suggestion: that we are, and that we are what we are in space and time. The map? Simply a trace of where we've been.
In a way it's a pleasure to watch Wolfe doing a complete overhaul on a man, or a woman either, and in another way it's enough to make you grit your teeth. When you know exactly what he's after and he's sneaking up on it without the slightest sound to alarm the victim, it's a joy to be there. But when he's after nothing in particular, or if he is you don't know what, and he pokes in this hole a while and then tries another one, and then goes back to the first one and as far as you can see is getting absolutely nowhere, and the hours go by, and your sandwiches and milk are all gone long ago, sooner or later the time comes when you don't even bother to get a hand in front of your yawns, let alone swallow them.

... REX STOUT
And Be a Villain
This chapter consists of the material relevant to the mapping question mailed to Group L prior to departure for Europe. Its nature and raison d'être has been briefly discussed in the foregoing and here I merely want to discuss the issue of chronology. The first envelope mailed to the kids contained Talking With Maps and was in the mails by the 15th of June. Since departure for Europe was on the 30th of June, we were working against a very tight deadline. The final sorting of the entire tour population into units and groups had been completed in the first week of June and we did not receive the names and addresses of our group until the second week. Immediately upon their receipt we rushed the first installment off.

As may be imagined there followed a week in which we scarcely breathed, so great was the tension of waiting for some initial indication of our success or failure. You must understand that we had never met these kids, knew only that they were around fifteen or sixteen years old, and that they comprised a typical tour population, whatever that was. Nor had we much of a clue as to their socio-economic status. Such indicators as addresses reading "500 Country Club Lane, Monroe, Louisiana" and the fact that they could all afford a trip to Europe costing at least $950 were tenuous to say the least, but filled us with no small trepidation. Would our materials be regarded as irksome bores to be relegated speedily to the waste-basket? Were we trespassing too severely on that valuable last minute time? How were we being received out there in America?

So when the Monday post rolled in with our envelopes returning we were, to say the least, relieved. When we began to examine the results we were overjoyed. Such glorious maps! Such obvious care! That very afternoon the 22nd of June, we mailed out the second installment, Talking with Maps II, Environmental A, and the first part of the psychological questionnaire. This second installment involved more work than the first and it was with, if anything, increased fear that we waited out that week. The continuing returns from the first mailing did little to allay our worries. That the kids had responded to the first was all well and good. How would they respond to a second, even more demanding, installment?

The next Monday rolled around and the second installment began returning. All was well. There was no question that we had results — and cooperation. But it was the 29th of June. We had not waited for the returns on the second installment to begin sending out the third. This had nothing to do with maps but contained the second part of the psychological questionnaire along with the stereotypes schedule. The
instructions included with this third mailing begged the kids not to mail this back to us but rather to bring it with them to the airport where we would, in all innocence I say this, pick them up.

Three things about this operation we considered critical. The first, of course, was that all the kids understand the rudiments of our approach to mapping. This was the raison d'être for the entire affair. The second, and more general reason, was that we wanted to have effectively introduced ourselves, our roles during the tour, and the project as a whole to the kids prior to arrival in Europe. In this way, the work could commence immediately and no time would be lost during the critical first few days. Third and finally, we wished to know as much about Group L as possible. The schedules would contain valuable information about the kids which would be of no little aid during the tour itself. It was with this objective in mind that we asked the kids to bring the third installment to the airport.

The results of these introductory exercises are examined in the next chapter. Naturally, we had the time neither before departure, nor during the trip itself to make so minute an examination as is essayed in the following chapter.

All was not smooth sailing. We had not, at the time of departure, received returns from all concerned, and items such as the following began to appear with increasing frequency:

Gentlemen;

I am working full time prior to departure date, June 30, 1971. I have completed all requests except Part II and Part III. I personally found the symbols to be most interesting and useful, however the late date of receiving the materials was too demanding of my time.

Robert Watson

Shoal waters were ahead but, without further ado, I present Talking with Maps, Talking with Maps II, and Environmental A, exactly as sent to the kids themselves, without correction or addition.
Part I

Just exactly why it is so exciting to view the world from a spot high above its surface is hard to say, but still, who doesn't appreciate such a view! Searching for such views, people go to the top of the Empire State Building in New York City, the Memorial Arch in St. Louis, the Needle in Seattle; searching for such views people scale mountains, hills and cliffs everywhere; to get such views people will pay higher rents to get higher floors in apartment buildings, and almost always pick window seats in airplanes. From ski lifts to ferris wheels, the view from above is exciting. Nor is this purely an American thing. People around the world all find pleasure in such views.

While the excitement varies from situation to situation and from person to person- and I'm sure you can think of differences in your own experience, not only is it fun to be high up above the world, but you see a view of the world that is increasingly grand, increasingly enlarged, increasingly all-encompassing, the higher up you are. To better understand the truth of this fact - that the viewable area increases with altitude - you can perform a simple experiment. Sit down on the grass and get your eyes as close to the ground as possible. Do this in your yard or in a park. Now raise your head to a sitting position. Do you see more of your surrounds? Now stand up and you'll be able to see still more. From a standing position you can see over low walls that would have blocked your view sitting down. Now increase your altitude. The second floor of your home or your school will considerably increase your altitude. Or climb high up in a tree. Now, how much can you see? Think about how much you can see from an airplane - or the ultimate view of the astronauts on their way to the moon. They can see half the earth in a single glance.

For much of our daily experience such an overview is not necessary or even possible. To see all of your classroom, you don't need to climb the walls. Nor do you need to float above a baseball field to see the game (although there might be some advantage to sitting high up in the stands). These are relatively small areas that you can take in standing up or even sitting down. But now think of an area, the size say, of your city, the whole city. You can't see this all at
once unless you're above it, unless you take an aerial view. Are there reasons for wanting to see such an area all at once? Seeing an entire city from above allows you to understand the city better, to relate streets to streets better, to see the entire course of the river through the city, to understand how that landmark relates to that landmark. The result is an increased ability to move through the city on the ground, to know where this or that street goes even though you can't see where it goes from the ground. In Paris, this would be one reason for visiting the Eiffel Tower - to see Paris laid out before you at your feet; in London this would be a reason for visiting the Post Office Tower - to get an overview of London.

There are, of course, other ways to get this overview. One of these is from photographs of the city taken from the air - air photos. When you look at an airphoto it is almost as though you are above the city. And from airphotos, it is a simple step to maps. Maps, common ordinary everyday maps, provide a very similar overview of the city. Of course, they don't show all the houses and chimneys and people looking like ants, but they have advantages that more than make up for these losses. Say you and a friend were on top of a hill overlooking your city and you pointed somewhere and said: "There's our Neighborhood," and your friend pointed somewhere else and said: "No, there's our Neighborhood." Views, like airphotos, don't have names written on them; they won't help you answer this kind of question. But maps do have names on them and that's a real advantage. Furthermore, maps can show imaginary things like boundaries. Between states, for example, the boundary is mostly invisible. We know where the boundary is because it is on a map. Maps can show many things that you can't see from a view or on an airphoto. Maps can show districts, cities, countries, names, populations, densities (like so many people per square mile), none of which can be seen from the air. So, if maps are less exciting than airphotos and real live overviews, their practicality more than makes up for the losses.

Now if reading a map has advantages, how about making a map? People make maps all the time, for instance if a friend from another city is coming to visit you, you may draw him a map of how to get from the nearest Interstate or Turnpike to your house. On the following sheet of paper, I'd like you
to draw a map of your city, and I'd like you to draw it now, before you go on reading, because we'll be talking about the map you drew later on. So without further ado, draw a map of your city. When you've finished your map, continue reading.
Part II  Answer questions in blanks provided.

Now, of course, we don't know what you've drawn, so we can't analyze your map, but you can. One thing, please don't go back and draw anything else on your map, because we'll want to see it. The first question I want to ask concerns the extent of the area you mapped. Did you map only downtown, or only your neighborhood, or some other small part of the city? Or did you try to map the whole city?

Secondly, what place is in the center of the paper? Is it the real center of the city? The square? The commons? Or is your own home in the center? Or some place you're familiar with?

Thirdly, does your map cover the entire sheet of paper or just a small part of the paper?

Fourthly, what is the scale of your map? This question is more complex than the others and may need some explanation. Take your thumb and put it somewhere, anywhere, on the map. Now, how many miles, or feet, or blocks does your thumb cover?

Move your thumb around the map. Does it always cover the same number of units, of miles or feet?

If it does, your scale is so many units per thumb. If you were to use a ruler, you could determine true scale: so many units per inch. But if your thumb does not cover the same number of units - if here it covers two miles and there twenty miles, then your scale is inconstant. Why is it inconstant?

Did you draw places you know better larger than other places?

Think about these questions.

Grade your map. Does it show all that you know about the place you're mapping? More questions. What symbols did you use for streets?

Did you draw streets?

What symbols did you use for buildings, rotaries, interchanges?

Are the symbols consistent?

Does the same symbol always stand for the same thing?

Now I want you to take an imaginary trip on your map. Pick a street and in your mind move along that street as you
usually do by foot or by car or what have you. You’re moving down the street. You come to an intersection. Look around you in your mind. Do the streets cross at right angles, or at some strange angle? Look at your map. Did you draw the right angle of intersection? Wander around your map in your mind and visualize where you are. Is your map accurate or could it have been better? How many streets did you draw? How many more streets are there that you know but didn’t draw? Do the streets you drew go to the right places? Do they go in the right direction? The chances are, that no matter how good your map is, it could have been a lot better.

The most likely reason for the fact that your map is not as good as your knowledge of the city lies in the way you drew your map. We want to suggest another way of going about it that may help you draw a better map. First, an example: we are going to map Washington, D.C. in this new way.

1) We will pick a particular place or point (a building, landmark, intersection, rotary, square, and so on) that is as close as possible to the center of Washington. We will represent this point by a small circle, and we will place it in the center of the page as in the following illustration. We will also label it:
2) We will pick a second point according to the following rule: it will be a point which we associate with the first point (in this case the Washington Monument), which is distinct and separate from it, and yet which is not too far away. Perhaps it is visible from the first point, but not necessarily. But it is definitely very distant. Imagine yourself standing at the first point and looking down the street, or mall, or square, or commons. Where is the next point that is equally as important as the first in terms of finding your way around? Is it a major intersection? A rotary? A big bend in the road? Another landmark that is prominent? From the Washington Monument we see the Capitol. That will be our second point. Before you put it down, visualize how far away you think it is. Remember, if you think it is half a mile and you draw an inch, then every time you draw an inch it should stand for half a mile. Ten miles would be twenty inches. How big is your paper? This is where you will set the scale for the entire map.

3) Now we'll connect the two points. In Washington the Mall runs between them, but whatever it is, we will use a simple line to show it. If it is a straight connection, use a straight line. If the connection bends, make your line bend, and so on. The important rule here is: Never draw a
line first unless you have two points to connect. Always proceed with the first point, then the second point, then the line, then point, line, point, line. Number the lines starting with 1 as in the following illustration:

4) Pick a third point. **If possible**, you should be able to connect this third point to both of the first points. We pick the White House as our third point.
5) Now connect this third point to the preceding two, if possible. In our case, it is possible. Between the White House and the Washington Monument runs the Ellipse, while Pennsylvania Avenue runs between the White House and the Capitol. Number these lines 2 and 3. It will not always be true that the third point will connect to both preceding points. Sometimes it will just connect with one point.

6) Proceed in this manner, point, line, point, line, to build up your map from the inside out, bit by bit. Imagine standing at the points before drawing your next point. Move along the connections in your minds. Use small circles for your points and simple lines for your connections. Remember that points can be anything like buildings or intersections or landmarks or hilltops. After a while our map of Washington might look like this:
We are going to ask you to draw another map of your city and to draw it in the manner we've just described, with a couple of additional wrinkles. One of these wrinkles will allow you to show something you're not really sure of. For instance, if you know there is a street there but aren't really too sure of its shape (curvy or straight) or length, draw it anyway, but use question marks to show your unsureness. More question marks will mean more unsure.

And if you know a street intersects another street but are not sure of the angle of the intersection, DON'T connect the line to the circle and leave a question mark in the empty space:

Let's review the rules for making a map:

1. Pick a centrally located point or particular place.
2. Represent this with a small circle and label it.
3. Pick a second point or place that is the right distance from the first. Think about how far away it is. Remember, this will set the scale for the whole map. Use a small circle and don't forget to label it.
4. Connect it to the first point with a simple line. Number the line 1.
5. Continue to choose points connecting them to as many previous points as possible. Label all the points and number each line as you add it to the map. Work from the center out.
6. Use question marks to indicate uncertainty.
7. Use a pencil (not a pen or magic marker) with a good eraser.

The following sheet of paper is a sheet of tracing paper. Do not draw your map on it. Draw on the white paper beneath it. Take your time and draw a good map.
Part III

Now that you've drawn your map go back and put the piece of tracing paper down on top of it. You'll notice that you can see through the tracing paper to the map you've just drawn. The closer the tracing paper is, the clearer your map will be seen through it. There is an important point to the tracing paper. It allows you to draw on your base map without cluttering it up. And with two sheets of paper you could draw two different sets of things about your city. And with three sheets of tracing paper three sets of things and so on. On this sheet of tracing paper I want you to draw regions. These regions could be anything you see happening in the city. They could represent neighborhoods, shopping districts, downtown, or however you see the city divided. The point is that these regions are not points, that is, not a single building or landmark, and not lines, that is streets and so on, but collections of buildings, landmarks, streets and so on. Use a single line for each region you draw, but before you draw anything, think about the boundaries of these regions. Think about what street is the edge of what region and which buildings are in each region. The tracing paper itself will look something like the following, but underneath it you will be able to see the streets and points of your original map.

When you've finished both maps (the first one you drew with no instructions, the second map with the circles and lines on it) and the tracing paper overlay, return the exercise as soon as possible to us.
This exercise is the second and final installment in our quick course in understanding and expressing the environment in maps. It consists of three things: 1) these pages in your hands; 2) five sheets of tracing paper; 3) a small booklet called Environmental A. The pages in hand and the tracing paper should be returned to us by mail as soon as you have finished with them, but we want you to bring Environmental A with you on the trip to Europe. We think that you'll enjoy trying to record your experiences using these symbols. In fact, we feel certain that they'll help you see Europe as few travelers ever have before. Your group is the first and only group to be testing out this language... and it is a language, a language that helps you talk about the European environment that you'll be experiencing on the trip.

The main purpose of this installment is to introduce you to Environmental A, but before we get into that, there are several additional points we'd like to make. First of all, some words of praise are in order regarding your performance on Installment I of the cartography course. Your original maps were surprisingly good. For the most part they were detailed and obviously done with interest and care. On the basis of this information alone, we are looking forward to having a good experience with you in Europe. Your second set of maps were also heartening. One of the reasons your performance was so pleasing is because Installment I was rather boring. We think you're really going to find this second installment interesting.

Part I

Let us start off by explaining to you our general idea behind the unique technique you're going to be using. We feel that there are two basic things wrong with traditional mapping approaches, and while they'll sound contradictory, they really aren't. First of all most maps are too cluttered. They have so much information on them that in many cases they become hard to use. But at the same time they don't contain enough meaningful information, and by meaningful we mean that while they show where a street is, they never tell you anything about that street, like whether it's pleasant and tree-lined or narrow and shadeless and crowded. So as far as we're concerned, traditional maps have too much information of the wrong sorts. What sort of a conversation can you have between maps of this sort? We feel, and think you'll agree, that our technique gets around both these objections.

First of all our map technique is based on the creation of a simple network or "skeleton." This "skeleton" is what we had you work out in Installment I, when you connected points and lines. But the big difference between the technique that you'll be using and the one traditionally used is that this skeleton will never become cluttered up because additional items of information will be overlaid on top of this skeleton on tracing paper rather than on the skeleton itself. So no matter how many different types of information you want to overlay on the skeleton, the skeleton will always be there for reference. Let us give you a hypothetical example of what this can mean. Take your "skeleton" of your city. Generally it contains points
or places connected by streets or lines, but it doesn't contain attitudes or feelings or perceptions of these places and streets. Now if you want to talk to someone about a place using a map, one of the things you'd want to say would be how you felt about those places and streets, which you liked, which you didn't and why. You might want to talk about "the feeling" in the air of a place, whether it was hostile or friendly, pleasant or unpleasant, crowded or empty, filled with a sense of life, or a sense of boredom, gay or sad, and so on. Or you might wish to talk about the types of businesses, or the quality of the restaurants, or whether or not the district closed down early at night or stayed open late. Or you might wish to describe the general type of architecture, the pace of life, the general color prevailing, the strong characteristic smells, the feeling of the pavement beneath your feet or the street beneath your tires. All of these attitudes, feelings, senses, attributes, types and judgements can be mapped. Maps can convey your view of the city. Maps can be very personal.

But being personal is only half the problem, for just as though you were trying to communicate an experience verbally you have to use words that everyone can understand and you have to be accurate. Imagine trying to tell someone about some experience and he didn't speak the same language! Or imagine two people trying to tell a third person about some event and they both disagreed about what happened. In either case, there would be difficult problems in communicating. Our mapping technique tries to get around these problems. Drawing the simple skeleton first using points and lines insures that there will be greater accuracy, while Environmental A provides a common language, a common set of map "words." Environmental A is thus a sort of map language dictionary. When you've mastered this technique you'll really be able to talk to us and everyone with maps.

The following sheet of paper is waiting for you to draw another map skeleton of your city. This second skeleton is important for two reasons. We want to see a second skeleton to compare with the first to understand how and why skeletons will change through time; but it will also provide a base map for you to use with Environmental A. We want you to tell us about your hometown; we want you to talk to us using nothing but maps. But first, let's review the rules:

1. Pick a centrally located point or particular place.

2. Represent this with a small circle and label it.

3. Pick your second point the right distance from the first. Try to visualize how far away it is. Remember that this will "set" the scale for the whole map. Use a small circle and label it.

4. Connect it to the first point with a simple line. Number the line 1.

5. Continue to choose points connecting them to as many previous points as possible. Label all the points and number each line as you add it to the map. Work out from the center in small steps.

6. Use question marks to indicate uncertainty of direction or length.

7. Use a pencil with a good eraser.
If you are now satisfied with your point-line network, pick up Environmental A. Quickly run through the symbols to familiarize yourself with the sorts of words available in this mapping language. Notice how they're arranged by point, line and area. Let's deal with this first. All environmental phenomena can be classified either point, line, or area, depending on the scale of operations. For example, the floor of your room is an areal phenomenon, the walls linear phenomenon, and a wastebasket a point at this scale. But when you map a larger area, your entire house becomes a point, streets become linear and blocks areal. At a still smaller scale, the entire city becomes a point, rivers become linear and entire states are areal. At the scale of the entire universe, the entire earth becomes a mere point. We'll be working at the scale of a city. In the following blanks, try to think of as many point, line, and areal phenomena as possible:

Points: 

Lines: 

Areas: 

Check over your lists and compare them with the things listed in Environmental A. Note particularly the variations on a theme in the dictionary. For example, if we have you use simple lines for streets and other connections on the skeleton, we provide a whole bunch of symbols to allow you to talk about the streets. You can now note what sort of street or connection it is, whether an alley or street, whether a freeway or a boulevard. Intersections are points and there are a variety of symbols for intersections, for example an overpass or cloverleaf or rotary or simple stoplight style intersection. But this sort of commentary must not go on the "skeleton." Take out the staples holding these pages together and place a sheet of tracing paper over your skeleton. Now go to town. You have three sheets of tracing paper with which to describe your home town. Go through the dictionary slowly and carefully. Getting acquainted with the symbol for an intersection is just like learning the word for "intersection" in a foreign language. Tell us all about your home town, how you like it, how it works together to make a functioning living place, an environment for life, your life.

New Words. We may not have all the symbols you'll need. You may want to use symbols to express things we haven't thought of. This is a common problem for writers, too. When something new is discovered or invented, like the telephone, a word must be created to describe it. When authors use a new word they define it, either in a footnote or in a glossary. A map glossary or footnote is called a "legend." If you wish to use a new word, put it in a legend on your map, but also enter it in the dictionary under its proper heading. We have left space in Environmental A for just this purpose. OK, tell us about where you live!
Part II

This exercise may seem a little strange to you at first, but it really isn't. Just as you can talk to us about someplace you've lived all your life with a map, so you can tell us about a place you've never been. You have some idea of what London is like. You know the River Thames flows through London, that Westminster Abbey, the House of Parliament, London Bridge, the Tower of London, Pall Mall and so on are in London. Also Carnaby Street and the Royal Albert Hall. What we want you to do on the following page is to draw a map of London, a city you've never seen. What you will be telling us is about your anticipations of London. Do you feel it's an orderly city or confusing? Is it crowded or empty feeling? Does it have little narrow streets or big broad boulevards or both? Is it a bright city, a gay city, a hopping city? Or is it slowly paced, drab, dull? Using the vocabulary provided in Environment A you can tell us all these things and more.

Obviously we are trying to get at something about your preconceptions of London. Your preconceptions will help us design better and better learning experiences for you in Europe. For these reasons we ask you not to use a map of London in completing the exercise. In the rules for creating the skeleton of a city we provide question marks to indicate uncertainty. Use a lot of question marks in mapping London. In fact, you may not necessarily be able to make streets come together. Use question marks, but don't forget, you're mapping someplace you've never been. You're not expected to know London at this point, but you may have anticipations and expectations about what London is going to look like. That's all we expect.

Use the tracing paper (save the last sheet however) to tell us your feelings about parts of London. Do they have particular smells? Colors? Styles of architecture? Put all these things on the tracing paper overlay, but make sure they overlay a skeleton of London. As we said, this may seem a little strange, but actually it will show you the potential use of Environment A; it will show you that anything in space you can talk about, you can map, even anticipations.

To help you out on this part the following pages contain a long list of things in London. Some of them you will recognize, some of them you have never heard of. You will get a chance to become personally acquainted with most of them on the trip. See how many of them you can put on your map. Don't forget that only the point and line things will show up on your "skeleton," and there only as small circles and simple lines, numbered and labeled. The areas will show up on the overlay along with the descriptive symbols from Environment A for the points and lines.
LIST OF LONDON PLACES

POINTS

Our list of points of interest in London is much longer than our list of lines or areas. There are several reasons for this state of affairs and they're all good. First of all, it's only logical that there be more points than lines or areas, since many points may exist on a single line, and since several lines will usually be found in any given area. Secondly, if you will just think of your knowledge of any famous city, like New York, you'll realize that only a few streets are really famous, like 5th Avenue or Park Avenue, while there are many points of interest that you've heard of, and I certainly don't need to list those. But even fewer areas than lines are well known, though you've heard of several in New York, like Harlem and Greenwich Village. But areas, which generally tend to be neighborhoods are of most importance to the long time resident, and not to the outsider. You'll see that this is the case with all the cities we visit in Europe. Note when you scan these lists that you've heard of a lot of these places. So without further ado, here's our list of London places, most of which you are going to see in person this summer.

Hyde Park Corner
Claridge's Hotel
Nelson's Monument
University of London (Main Campus)
The Winged Archer
The Temple
Speaker's Corner
The Tower of London
The Royal Courts of Justice
St. Paul's Church
Lincoln's Inn
The U.S. Embassy
Madame Taussauds
King's Cross Station
Victoria and Albert Museum
Gray's Inn
Paddington Station
The Royal Mint
Savoy Hotel
New Scotland Yard
Euston Station
The Bank of England
Holborn Circus
Trafalgar Square
The British Museum
Guildhall
Marble Arch
Russell Square
Royal Opera House

Elephant and Castle
Buckingham Palace
The Cenotaph
Tate Gallery
Parliament
Talk of the Town
Covent Garden
Grovesnor Square
Soho Square
St. Pancras Station
Old Vic Theater
Admiralty
Victoria Station
The Monument
Picadilly Circus
St. James Palace
Westminster Abbey
Royal Festival Hall
10 Downing Street
Saddler's Wells Theater
St. Martins in the Field Church
Post Office Tower
National Gallery
House Guards Parade
Our list of lines, even though it is substantially shorter than our list of points, is nevertheless quite long. Still, we'd bet that you'd heard of at least half of them - in the newspaper, in Sherlock Holmes stories, in James Bond stories, and so on. These are our lines:

Blackfriars Bridge
Park Lane
Bond Street
Oxford Road
Victoria (The) Embankment
Shaftesbury Avenue
Regent Road
London Bridge
Pall Mall
Westminster Bridge
Tottenham Court Road
Tower Bridge
Charring Cross Road
Fleet Street
Downing Street
Waterloo Bridge
Whitehall Street
The Thames River
Vauxhall Bridge
Piccadilly Road
Carnaby Street
The Strand
The Mall
Holborn Road

As we suggested earlier, the areas will be least familiar to you. Still, many of the names you'll recognize, even though you may not have realized that originally they were names of areas in London. Note the many sorts of things that are big enough on the city scale to be called areas.

Green Park
Highgate
Billingsgate Market
Kensington Gardens
The West End
London Docks
South Bank
Soho
The City
Knightsbridge
Hampstead Heath
Piccadilly

The Serpentine
Regents Park
Hampstead
Mayfair
South Kensington
Chelsea
Petticoat Lane (Market)
St. James Park
Portobello Market
The East End
This is the last exercise, but potentially the most interesting. As you know, there are many serious things wrong with American cities today: they are too crowded, too filled with cars and parking lots, too dirty, too dangerous, too drab, lacking in green spaces, in parks and so on. The people who attempt to do things about these problems are city planners and their most important tool is the map. They map the city as it is in all its aspects and then they map the city the way they think it should be. The plans they develop are an attempt to make the map of the city as it is conform to the map of the city that they would like to see. Often people complain about what city planners suggest. Many people would like to see something different. So they go to meetings with the planners to make their suggestions. There should be more schools, more parks they say. "Where?" say the planners. The people have specific suggestions. Then the planners pull out their maps and show why it must be the way they say. People have a difficult time communicating with planners because they don't speak the same language. Planners speak the language of maps; most people don't. But now you do.

On the next sheet of paper we would like you to draw a map of an ideal city, your ideal city, the city you would design if you were a city planner. Proceed as usual. First create the skeleton of the city, the points and lines, the buildings and streets as it were. Use small circles and simple lines as always. Then on the tracing paper add the skin and muscles and hair of the city: the shopping districts and entertainment districts and recreational areas; the parks, skyscrapers, flowers and fountains; the factories, and freeways of the city. This is your ideal city. It could be a city for a million or a thousand. Perhaps when you return from Europe where you'll see cities different from anything you've ever known, you'll have some real suggestions for the planners. You'll also be speaking their language. This is a dry run. Maps will let you say anything you want.

Please don't forget to return these things to us as soon as possible.

(NOTE: The following dictionary of symbols was printed as a small bound booklet measuring 6-1/4 by 9 inches. The cover was gray and black and under the words environmental a (entirely in lower case type) two young black eyes stared out of a faced truncated above the brow and below the nose. The size was such that it could be carried about by the kids in their special tour flight bags. It was fairly attractive and certainly of interest to most of the kids. Included at the back of the book were a number of blank pages, useful for whatever purpose. For our purposes it has been reproduced full size, and the blank pages have been omitted.
ENVIRONMENTAL A

You've been hearing a lot about Environmental A, and this is it; a graphic language system that'll let you talk about your European experiences in a new and exciting way. Actually, you've already been using Environmental A, because this new language is not only a set of symbols, but a whole new way of using them as well. There are three basic parts of this new language, and you've already been introduced to the first two: 1) The single most revolutionary aspect of Environmental A is the method for creating the underlying skeleton or network of points and lines. This method you've already used two or three times; 2) A second major change is the use of overlays on which to portray more interesting sorts of information than can be shown on the skeleton; 3) The third new aspect is the set of symbols you'll be using from now on, on the overlays. If you'll flip through the following pages, you'll note several large empty areas. These areas are for you! We left them blank because we recognize the fact that you will have valuable and interesting suggestions to make about new symbols—not only new symbols, but changes in old symbols and new things to symbolize. Your advice will be taken very seriously. We need your advice!

Part I THE SKELETON

These are the same old rules. They are put here for review purposes. You'll be able to consult them in Europe while you're drawing your maps, because you'll have this booklet with you.

1) In the center of the paper place a small circle. This circle represents the center of whatever you're mapping. In London this may be Trafalgar Square, in Paris the Place de la Concorde, in Rome the Forum. Always remember that this first circle is the center.

2) Stand at this point in your mind. Visualize the way the streets run off from this point. Travel down them in your mind until you come to a second point. This point must not be too far away from the first and at the same time it must not be adjacent to the first.

3) Before you place this point on the map, visualize in your mind the distance between the two points. Remember that this distance will set the scale for the entire map to follow.
4) Now connect these two points with a simple line.

5) Pick a third point in the same manner that you picked the second point. Connect this third point to both preceding points if possible.

6) Proceed in this manner to build up your skeleton. Connect each new point to as many preceding points as possible. Work from the center of the map out to the edges. Don't go jumping all over the page.

7) LABEL EACH POINT. USE ABBREVIATIONS WHEREEVER POSSIBLE.

8) NUMBER EACH LINE SEGMENT AS YOU PUT IT ON THE MAP.

9) USE QUESTION MARKS TO INDICATE UNCERTAINTY FOR DIRECTION AND LENGTH OF LINE SEGMENT.

10) PUT ALL ADDITIONAL INFORMATION ON THE OVERLAYS.

Part II

The dictionary portion of Environmental A follows immediately below. It is broken up into eight smaller units. There is a section of point symbols, line symbols, area symbols, and attribute symbols. This last section is potentially the most interesting. It consists of symbols that will allow you to modify any other symbol. For example, there is a symbol that lets you say whether or not you liked a place. These symbols are like adjectives and adverbs in English. In addition to these eight sections there are four blank sections. These are for you to fill in with any new symbols you come up with.

THESE SYMBOLS ARE TO BE USED ON THE OVERLAYS ONLY. They will go over the points, and lines of the skeleton. Let's take an example. Say you used Trafalgar Square as the center of your London Map. This will have been symbolized by a small filled-in circle on your skeleton. But what is it? From looking at your skeleton alone, who can tell? So first off, you'd look up the symbol for a square. It's a small square inside a larger square. On your overlay you'd put this symbol directly over the small skeleton circle. It would not be as small as your small circle; in fact it would be as large as necessary. Now, anything else to say about Trafalgar Square? Look up the symbols for crowded, constricting, noisy, hot, or conversely for empty, expansive, quiet, cool. Glance through the dictionary. Look at all your options. Say as much, or as little, as you like. Don't, however, forget that the symbol goes over a point or a line on the skeleton. Unless it's an area symbol. These will cover large numbers of points and lines.
POINTS

AIRPORT - See TRANSPORTATION TERMINAL

APARTMENT - is a single home symbol (a square), three times high. Join this symbol together to create blocks of apartments.

ARENA - See STADIUM

ART GALLERY - See SHOP

BANDSTAND - this symbol looks like the symbol for a kiosk but it has a circle on the bottom

BANK - this is symbolized by the grill at the bank teller's window

BAR - this is symbolized by an olive with a toothpick in it

BELL - use a small bell for bells

BENCHES - this is a simple drawing of a bench

BILLBOARD - this is a heavy and distinct line, that's all

BOAT - our symbol is a simple outline of a boat

BOOKSTORE - See SHOP

BUILDINGS - See GOVERNMENT BUILDINGS, SKYSCRAPERS, STORES, APARTMENTS, HOMES, CASTLE, CHATEAU

BUS STATION - See TRANSPORTATION TERMINAL
CAFE - See OUTDOOR CAFE or RESTAURANT

CASTLE - this is a tower from a castle. It is also the symbol for a CHATEAU, a TOWER, and a PALACE

CHATEAU - See CASTLE

CHURCH - the symbol is a cross. See also TEMPLE

COLLEGE - See SCHOOL

CONSTRUCTION - this symbol is based on the famous crane invented in Europe that climbs up with the rising building

CROWDS - this is just a bunch of "x"s, all crammed together

DEPARTMENT STORE - this is symbolized by a simple outline of a large building. This symbol is easy to join together resulting in a street lined by department stores. See also SHOP

DISTANT POINTS - See HILL, MOUNTAIN, RADIO TOWER

DOCK - See TRANSPORTATION TERMINAL

ELEMENTARY SCHOOL - See SCHOOL

FACTORIES - our symbol for a factory is simply a hammer

FIRE STATION - this is the fireman's ladder

FLORAL BANKS - See FLOWERS
FLOWERS - this is a flower for flowers

WATER SPRAYING IN THE AIR - the symbol is water spraying in the air

GARDENS - See FLOWERS

GAS STATIONS - this is a circle with a "G" inside

GATES - There gates are gates in walls and consequently cannot exist without a wall. See WALL for this symbol. A "city" or "monumental" gate is symbolized under ARCH

GATHERING POINT - this is where people congregate for the sake of congregating. Includes things like the Speakers Corner in Hyde Park, various plazas in Italy.

GOVERNMENT BUILDING - this is the basic home symbol (a square) turned into a rectangle with a black arrow pointing to the street. This would include post offices, treasuries, ministries, embassies and so on. See also SKYSCRAPER

GRASS - this is a simple symbol. Do not confuse this with the symbol for fountains.

GRASSY PLOTS - See GRASS

HIGH SCHOOL - See SCHOOL

HILL - use this symbol for a hill on the horizon

HOME - the single, freestanding private home is symbolized as a simple empty square. Joined together you have ROW HOUSES.
HOSPITAL - the cross of the International Red Cross

HOTEL - the basic home symbol (a square) with an X drawn larger than the square over it. See PENSION, INN

INN - the basic home symbol (a square with an X drawn inside the square and smaller than it. See HOTEL, PENSION

INTERSECTION - the small filled-in circle used on the skeleton. But see ROTARY, SQUARE

KIOSK - this is a simple drawing of a kiosk. Use this symbol for all newspaper stands, book stalls, and vendors of all sorts.

LIBRARY - See MUSEUM

MONUMENTS - this is an obelisk. For other monuments see ARCHES, STATUES

MOUNTAIN - use this symbol for mountains on the horizon only

MUSEUM - this is a swank building with pillars. Also Stands for LIBRARY and OPERA HOUSE or any high culture fancy building

NIGHT CLUB - this is a picture of a record.

OPERA HOUSE - See MUSEUM

OUTDOOR CAFE - This is a simple drawing of a typical cafe table

PALACE - See CASTLE

PARADE - See also PLAZA
PENSION - See INN, HOTEL

PIER - See TRANSPORTATION TERMINAL

PISSOIRS - you'll only find these in Paris. Our symbol shows the pissoir wall as seen from above

PLAZA - See also SQUARE, ROTARY

POLICE STATION - This is the cop's badge

PRIVATE HOME - See HOME

RADIO TOWER - our symbol is simply a little radio tower

RESTAURANTS - symbolized by a spoon and fork crossed. See also BAR, OUTDOOR CAFE

ROW HOUSES - See HOME

ROTARY - See also SQUARE, PLAZA

RUINS - this symbol is a crumbling pillar

SCHOOL - a school is the basic home symbol (the square) with an identifying letter inside the square.

   ELEMENTARY SCHOOL

   HIGH SCHOOL - including Junior High

   UNIVERSITY - including colleges

SHIP - See BOAT

SHOP - this symbol is a take-off on the department store symbol and is easy to join together creating a street lined with shops.
SHOWROOMS - This is a square with an "s" inside

SKYSCRAPER - this is a rectangle with a blackened arrow pointing away from the street

SLOPE - in using this symbol be careful, the curves only point downhill. If you wish to indicate uphill movement, use the symbol, but remember the curves point downhill.

SMOKESTACKS - this is a smokestack with lots of smoke

SOCIAL GATHERING POINT - See GETHERING POINT

SPORTS FIELD - use this soccer ball symbol for all sports fields

SQUARE - See also ROTARY, PLAZA

STADIUM - this is a simple drawing of a stadium. Also stands for ARENA

STOP LIGHTS - See TRAFFIC CONTROLLERS

STORE - See DEPARTMENT STORE or SHOP

SUBWAY STATION - See TRANSPORTATION TERMINAL

SYMPHONY HALL - See MUSEUM

TELEPHONE BOX - this is symbolized by a small telephone receiver

TEMPLE - the symbol is a star of David. See also CHURCH

TOWER - See CASTLE

TRAFFIC CONTROLLERS - This is a simple drawing of a stop light, but stands for all signs or lights that control traffic.
TRANSPORTATION TERMINAL - the basic symbol is an arrow entering and stopping in a simple geometric shape. The shape depends on the type of transportation.

- BUS - a Circle
- BOAT - a Boat shape
- TRAIN - a square
- SUBWAY - a square
- AIR - a triangle

If there is more than one type of transportation at a terminal, use the symbol of the major type.

TREES - we have two tree symbols. One is for evergreens, the other for deciduous trees, but use whichever you prefer.

UNDERGROUND STATION - See TRANSPORTATION TERMINAL

UNIVERSITY - See SCHOOL

VENDING STALLS - see KIOSK

VIEW - see VISTA

VISTA - this is a point from which there is a terrific vista or view and is symbolized by an open eye with an arrow pointing in the direction of the view.

WAREHOUSES - our symbol for a warehouse is simple to draw and it represents a forklift truck.

WATER - use this symbol for small ponds and the like.
points - new words

Here are some blank spaces to put any new symbols you may think of. Anything at all.

lines

alleys - an alley is a step down from a lane, so we dash the lane symbol.

avenue - this is wider than a street or road and hence is symbolized by three simple lines.

barrier - this is something in the nature of a line that stops forward movement. It could be a wall, an elevated freeway, a freeway, a busy street, a river, and so on.

boulevard - a boulevard is like two streets, so that symbol shows two streets separated by notch marks.

bridge - this is bridges over water, rivers, valleys and the like, not for under or overpasses.
CANAL - a canal is two lines filled with water.

CANYON - this is to symbolize the feeling that you're in a canyon when on a street. The feeling comes up often in New York.

EMBANKMENT - this is the avenue symbol with a curled edge on the river side of the embankment.

EXPRESSWAY - See FREEWAY, also OVERPASS, UNDERPASS, and ELEVATED FREEWAY.

FREEWAY - is two lines filled with "x"s. For freeway OVERPASSES, UNDERPASSES, see OVERPASS, UNDERPASS. For elevated freeways see, ELEVATED FREEWAY.

GATES - see WALLS

HORIZON LINE - this could be the edge of your map, could be prepared with hills, mountains and radio towers. Or it could be useless.

LANES - this is a single straight line, very simple.

MALL - this is the point symbol for a square turned long into a mall.

OVERPASS - see UNDERPASS

PATH - see SIDEWALK

QUAI - see EMBANKMENT

RAILROAD - this looks like a railroad, two simple lines with short cross lines - tracks and ties. See also SUBWAY, STREETCAR.
RIVER - two simple lines with fish swimming in them. A CANAL is two simple lines with water in between.

ROAD - see STREET

ROWS OF - ...The following are rows of point symbols that can be simply joined together or repeated to make a line symbol. Thus a street lined with stores is a line symbol of stores.

APARTMENTS

BANKS

BARS

BENCHES

BILLBOARDS

CROWDS

FLOWERS

GARDENS

GAS STATIONS

GOVERNMENT BUILDINGS

GRASS

HOMES

HOTELS

NIGHTCLUBS

OUTDOOR CAFES

PENSIONS

RESTAURANTS

SHOPS

SHOWROOMS

SIGNS
SKYSCRAPERS
SLOPES
STALLS
STORES
TREES
VIEWS
VISTAS
WAREHOUSES
WATER

SIDEWALKS - the lowest level of movement channels is a
dotted line.

STREAM - see CANAL, not RIVER

STREETS - a pair of single lines, the most common line symbol
you'll be using.

STREETCAR - this is surface rail transportation which is not
a railroad. It is for SUBWAY tracks when they
surface

SUBWAY - this is the streetcar symbol broken to indicate that
its underground

UNDERGROUND - see SUBWAY

UNDERPASS - this could be when a road goes under another road,
when a railroad goes under a road, or whatever

WALL - a wall is symbolized by a simple straight line with
short cross lines at gates and at corners.
WATERFRONT - the line of separation between land and water symbolized by a sketch of docks.

LINES - NEW WORDS

Here are some blank spaces to put any new symbols you may think of. Anything at all.
AREAS

There are very few unique area symbols. Most of the area symbols are composed by using point or line symbols over a bigger area. Some of these are illustrated below. We leave the invention of the others up to you.

COMMERCIAL AREAS - the way we symbolize a commercial area is by mixing together the lines symbols for stores (in the line section under ROWS OF) with some of the attribute symbols indicating quality. You would use the appropriate store and quality symbols.

DOCKS - this is a second case in which we've used a mixed bag of point and line symbols to represent an area. Here we've used the line symbol for WATERFRONT combined with the point symbols for WAREHOUSES and BOATS.

ENTERTAINMENT AREAS - this is composed entirely of point symbols except for one areal symbol. It's in the lower right hand corner and is the symbol for a GRID AREA.

GRID AREAS - as you'll see further on this is also the basic areal symbol for a RESIDENTIAL AREA. The use of it in this case indicates that the streets in the area all make perfect 90 degree, right angle corners with each other. Used in conjunction with other symbols it indicates, as in the case of ENTERTAINMENT AREAS, that the streets make a perfect grid.

INDUSTRIAL AREAS - here we've used a variety of point symbols and the grid areal symbol again.

LAKES - and all other large bodies of water are symbolized by the point water symbol repeated to fill up an area.
MIXED AREAS - in this instance just create the appropriate mix of symbols to represent or capture the nature of the area.

NON-GRID - this symbol is used to indicate that the streets in the area are not orderly, that they run every which confusing way. This symbol can fill an entire area or be used as the GRID symbol was used in the ENTERTAINMENT AREA above.

OFFICIAL AREAS - we used a grid symbol to fill the area pretty much and have sprinkled a number of the point symbols for GOVERNMENT BUILDINGS around. We've also added a number of restaurants and bars.

PARKS - scatter a lot of tree and grass and flower symbols around. If there are paths as well, show paths. And so on.

RESIDENTIAL AREA - the use of either the GRID AREA or NON-GRID AREA symbol with no other symbol indicates that the primary land use is RESIDENTIAL. The use of the GRID symbol indicates that it's residential and the street pattern is like a grid; the NON-GRID pattern alone indicates that it's residential but that the street pattern is confusing.

AREA SYMBOLS - NEW WORDS
These symbols are entirely different from the preceding point, line and area symbols, for two basic reasons: 1) These are symbols, not of places themselves, but of feelings you might have about places; in other words, attributes of places; 2) These symbols will be used to modify other symbols, and can be used in as many combinations as possible or necessary. Thus you could use one, three or even ten different symbols from the following to modify just one area or square or street. Furthermore, the attribute symbols may be used to modify each other as well. Thus, you may use the noise symbol and then modify that to indicate whether you liked the noise or not. Sometimes noise is appreciated; at other times it's a drag. With Environmental A you can say which!

- ANCIENT - not necessarily old in years, but old in spirit, use a division sign.

- BARRIER - see END

- BUMPY - the road is very bumpy. Add a bumpy line to the road symbol.

- CLEAN - it sparkled it was so clean. Use a broom.

- CONFUSING - the outstanding attribute of the place was madhouse confusion. Use a giant question mark.

- COOL - use a crescent moon if the place was cool, like shady parks, shady avenues, breezy, and so on.

- CONSTRICTING - use a bunch of arrows pointing together for a place where you feel crushed.

- CROWDED - things are so jammed together you feel like exploding. Use a stick of dynamite.

- CURVING - the street, avenue, boulevard curves you don't know which way. Just use a curved line.

- DANGER - when you feel hostility in the air, use a skull and crossbones.
DIRTY - the place was so dirty you didn't want to touch anything. Use a rat.

DOWNHILL - for a steep drop, use the slope sign on top of a road sign.

END - the end of an experience, a walk, a tour, a view, use the sketch of an open hand saying stop.

EMPTY - the square was deserted, the hotel empty. Use a circle with an arrow pointing away.

EXCLUSIVE - use the English pound sign for exclusive stores, bars, shops, restaurants.

EXPANSIVE - use a bunch of arrows pointing apart if the space in a place set you soaring free.

FALLING - the road runs downhill, use the slope sign, drawing it over the road symbol.

FANCY - use the English pound sign to indicate fancy instead of plain.

FAST-PACED - use two connected 1/8 notes to describe a scene always on the move, hectic, frenetic.

FLOW - use an arrow to indicate the direction and strength of flows, like people moving or traffic. The bigger, the stronger.

HIGH CLASS - use the English pound sign to indicate high value.

HOSTILITY - you feel you're intruding, use a skull and crossbones.

HOT - use a sun if the place was a scorcher like most of Italy.
JOY - something about the place makes you happy, bursting with life. Use a smile.

LEISURELY PACED - use a half note to show that easy, slow pace of living that's so refreshing.

LITTER - litter was everywhere. Use an overflowing trash basket.

LOUD - use a crescendo sign to show how deafening a place was.

LOVED IT - you feel in love with the Plaza San Marcos, all the pigeons and color - use a smitten heart.

LOW CLASS - use the cent sign to indicate low class neighborhoods, districts, bars, restaurants.

MIDDLE CLASS - use the dollar sign to indicate middle class neighborhoods or districts.

NEGATIVE - it doesn't impress you, you don't like it, use a minus sign.

NOW - this is for a place with the spirit of today, of now, the Pepsi generation. Use a multiplication sign.

ORDINARY - use the dollar sign for run of the mill stores, shops, neighborhoods, districts.

PAUSE - this place was the pause that refreshed. It might be quiet in a crazy city, the personal touch in a mechanic world, anyway use a comma to modify other symbols, or put them anywhere.

PERSONAL - this is when you have had a personal experience, probably emotional, and you don't want to explain. Just put the place in parenthesis. Somebody was nice to you, whistled at you, spit at you. Use parenthesis. If not in parenthesis, the place will be regarded as having no personal connotations at all.
POOR - use the cent sign to indicate the absence of money.

POSITIVE FEELING - it impresses you favorably, you like, add a plus sign.

QUIET - use a diminuendo sign to indicate the hush of a leafy square, a cloister, the inside of a church.

REALLY LOVED IT - see LOVED IT.

RELAXING - see RESTFULNESS

RESTFULNESS - here you feel relaxed, restful. Use a closed sleeping eye.

RISING - the road rises sharply, use the slope sign.

SADNESS - the scene overwhelms you with a sad feeling in the pit of your stomach. Use a crying eye.

SMELL - the smell overwhelmed you, of flowers and sunlight or sweat and garbage. Use a profile of a nose and modify it with other symbols.

SOUND - what impressed you about the place was the sound of it. Loud, noisy, or soft and quiet. Use an ear, modify with other symbols.

TASTE - you don't remember anything about the place, but the taste of fresh strawberries and cream. Use a mouth and modify it with other symbols.

TRAFFIC MOVEMENT - to indicate direction and strength, use an arrow. The bigger the arrow, the more powerful the flow.

UPHILL - the road rises up a steep hill. Use the slope symbol. The slope symbol goes over a road symbol.
UPPER CLASS - use the English pound sign for upper class neighborhoods or stores.

WEALTHY - use the English pound sign to indicate that lots of money feeling.

WOW - a feeling of wow, terrific, demands an exclamation point.

ZIGZAG - the road cuts this way and that, too confusing to draw. Just zigzag the road.
"I don't know that I can," Thorndyke answered calmly; "but I see you are taking the same view as the police, who persist in regarding a finger-print as a kind of magical touchstone, a final proof, beyond which inquiry need not go. Now, this is an entire mistake. A finger-print is merely a fact — a very important and significant one, I admit — but still a fact, which, like any other fact, requires to be weighed and measured with reference to its evidential value.

... R. AUSTIN FREEMAN
The Red Thumb Mark
As I pointed out at the beginning of the last chapter, our main interest in the results solicited by Talking with Maps and Environmental A was to be sure that Group L would be ready for mapping when they reached London. Dire predictions had been made by many aware of the extent of the project, predictions of serious failure resulting from the late date of our mailing and the relative enormity of the effort demanded from the kids. We were at times beset with qualms, but nothing could be lost by trying and much potentially gained. You are now familiar with the setup of the schedules so a simple table should suffice to indicate the degree of our success.

**TABLE 4.0**

**MAPPING RETURNS FROM PREDEPARTURE MATERIALS**

(NUMBER OF KIDS - 31)

<table>
<thead>
<tr>
<th>Material</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hometown Map #1 (Free)</td>
<td>20</td>
<td>65%</td>
</tr>
<tr>
<td>Questionnaire on Free Map</td>
<td>18</td>
<td>58%</td>
</tr>
<tr>
<td>Hometown Map #2 (Point-Line)</td>
<td>20</td>
<td>65%</td>
</tr>
<tr>
<td>Overlay for Hometown Map #2</td>
<td>20</td>
<td>65%</td>
</tr>
<tr>
<td>Hometown Map #3 (Point-Line)</td>
<td>15</td>
<td>48%</td>
</tr>
<tr>
<td>Overlays for Hometown Map #3</td>
<td>15</td>
<td>48%</td>
</tr>
<tr>
<td>Point-Line-Area List</td>
<td>15</td>
<td>48%</td>
</tr>
<tr>
<td>Predictive Map of London</td>
<td>10</td>
<td>32%</td>
</tr>
<tr>
<td>Overlays for Map of London</td>
<td>10</td>
<td>32%</td>
</tr>
<tr>
<td>Ideal City (with overlays)</td>
<td>13</td>
<td>42%</td>
</tr>
</tbody>
</table>

While our success was not complete, it was substantial. For the most important aspect of the materials, learning and using the point-line-area method, nearly two-thirds of Group L responded. (The percentages and proportions are calculated on a basis of the thirty-one kids in Group L. The materials were also sent to the Travel -Counselors, but none deigned to respond. Subsequently they did take part in the project and the later percentages and proportions are calculated on a variable basis.) A group of materials sent to an unknown audience rarely attains so high a return. Obviously, the second mailing began to tax their patience, for only half of the group responded to the request for a third map of the hometown; for the Predictive Morphology of London (admittedly an esoteric task) only a third responded.

Before proceeding to examine the results in more detail, a note on the characteristics of the sample size may be in order. I have
elsewhere (Wood, 1971, 54 et passim) ranted at length about image studies performed with incredibly small samples. I argued that an image study of a city the size of Boston with a sample population of thirty scarcely deserved the term "pilot study." Note that the universe of our investigation is Group L, which itself consists of thirty-one kids, six Travel-Counselors, two social scientists, a bus driver, and at times a courier. Of these, the bus driver and the courier took no part in the project so, that at the outside, our universe is a population of thirty-nine, and frequently, as in the instance at hand, only the thirty-one kids. Thus a figure like ten, which were it being used to generalize about the United States — or Boston — would be absurdly small, must be regarded in the context of this universe of thirty-one. In this context, ten kids is not a small figure at all. Where ten is not a small figure, twenty is much larger.

II

Twenty kids filled out Talking with Maps. There is little need to discuss the nature of the free-hand maps of their home towns for in the questionnaire that immediately followed, the kids did it for me.

The first question concerned the extent of the environment covered by the map. The instructions had asked simply for a map of the city. One kid claimed to have drawn the downtown of her city, five their own neighborhood, and twelve the entire city. This last statement might ordinarily be taken with a grain or two of salt, but in this case it is a simple statement of fact. Of these twelve, no less than five live in New York City, in Brooklyn, the Queens and Far Rockaway. All five drew New York City in its corporate entirety, all five boroughs, rivers and bays, et cetera. One girl, Erica Cruz, wrote:

"I misunderstood what you wanted. You wanted a map of my city but I live in New York City, which you must admit is a large city. For the second map I drew a small section of my borough and two nearby boroughs. I tried to do it well but I am not an artist so please overlook my errors and messiness."

I include this at this point to illustrate just how alive some of the kids were to the problem of what "city" is meant to include.

The second question asked what had been used as the center of the map. Nine kids used a consensual center, often specified as the
Figure 4.0  David Abrams' first hometown map.
Figure 4.1  David Abrams' second hometown map.
Commons, Town Hall or what have you. Our five New Yorkers centered their maps on their own borough, two kids centered it on their own neighborhood, and the remaining two on their own church and school respectively. Thus the map center seems to be predominantly consensual as well. The third question simply wanted to know what portion of the paper was covered. For the most part (89%), Group L used the entire sheet, mapping the whole city around a consensual node.

The questions next turned to the issue of scale. To get them involved with this issue in some active way it was suggested that they use their thumb as a standard to evaluate scale on the map. Eighty-nine percent of the group gave us a figure, either in miles or blocks per thumb. Eight kids averaged 1.74 miles per thumb (range: .16 to 3.5 miles per thumb) while another eight averaged 5.44 blocks per thumb (range: .5 to 17 blocks per thumb). However, in response to the next question, half agreed that scale was not constant all over the map, while 28% claimed it to be at most approximate, and 22% sounded a resounding "Yes" (yes, it was constant, followed by numerous exclamation points). Regarding the reasons for this inconsistency, some of the responses echoed a dull "Because it is." Other responses were most illuminating. Six kids said "a scaled drawing was not specified in the instructions!!!" How many of them were using this answer as a lame excuse is moot, but the criticism is trenchant nonetheless. Another called his sketch "a rough draft." Still another pointed out that the mind needed training to draw a map to scale. Five claimed that the center portion of the map was to scale, but that the edges were slighted, because the paper was too small. Only one noted that he had never drawn a map before, but as it turned out, this was more often than not the case. My favorite reason for the variation in scale came from Marina Gioconda. She pointed out that the width of the thumb varied with the amount of pressure exerted and that this would cause variation where none existed. She had reason to complain, as she had used the map in the telephone book as a crib to draw her own! (Only one other of the twenty kids relied on a published map. These two volunteered the fact.)

It is impossible in reading their responses not to think of my own oft stated objections to the technique of instructionless map drawing. That six of twenty kids should refer to the lack of instructions cannot be ignored, bolstered as it is by other responses. The fact that some felt the paper too small has to do with the fact that in drawing the center, the ultimate objective is overlooked (recall the case of Beck drawing the bridge over the Thames). Do not forget that these kids were drawing the environments they knew best. The next question has relevance at this point. I asked whether familiar areas were drawn larger than other areas. Two thirds claimed that they did exaggerate the size of familiar areas, one noting that "I am bound to draw the things I know better larger."
This sort of response simply means that it is imperative to raise into consciousness the issue of scale, unless the only information being sought is the extent of the area best known to the mapper.

Needless to say, these questions were asked with one goal in mind: to inform the group to be on the alert for these sorts of problems in the drawing of maps. That the preceding have yielded the project valuable information is an added bonus. With the exception of one question, the remaining can be summarized in a table.

TABLE 4.1

INSTRUCTIONLESS MAPPING QUESTIONNAIRE RESPONSES

(n - 18)

QUESTION: Are the symbols consistent?
Yes: 72%  No: 22%  No Answer: 6%

QUESTION: Does the same symbol always stand for the same thing?
Yes: 72%  No: 22%  No Answer 6%

QUESTION: Do the (real) streets cross at right, or some strange, angles?
Right: 39%  Strange: 33%  Depends: 17%  No Answer: 11%

QUESTION: Did you draw the right angle of the intersection?
Yes: 61%  Mostly: 6%  No: 17%  No Answer 16%

QUESTION: Do the streets go to the right places?
Yes: 61%  Mostly: 17%  No: 6%  No Answer: 16%

QUESTION: Do the streets go in the right directions?
Yes: 67%  Yes, some: 6%  Don't Know: 6%  No: 6%  No Answer: 15%
Figure 4.2 A detail of Marina Giaconda's first hometown map. (greatly assisted)
Figure 4.3 Marina Giaconda's second hometown map. (unassisted)
QUESTION: How many streets did you draw?

Average: 14.2  Range: 0-50

QUESTION: How many streets did you omit?

Average: 57.8  Range: 0-300
("Many": eight kids; "thousands": one)

One is overwhelmed by the sense of mapping confidence exuding from these kids. The majority always felt that they had performed the task correctly and this in the face of their self-assessment that the maps could have been better. Two felt that their maps were fairly accurate; another pair felt that their maps were "very accurate" or "as accurate as possible" (whatever that means). One of the kids who thought he could have done better added "with a course in mapping." The bulk of the kids drawing this first map thought highly of their skills, although most realized and admitted that they could have done better.

III

And so we enter the quagmire. All twenty who drew the instructionless map then drew a map using the point-line-area method. How did these sets compare? The quagmire is finding a basis of comparison. If the basis of comparison is the degree of conformality between the maps, the second set is vastly to be preferred. There is quite simply no question. With the first set of maps there is total variability. The girls drawing New York all sketched in areas, often using color to distinguish one borough from the other. Little other detail was included. (These were the kids who mapped zero streets and omitted three-hundred to thousands of them.) These maps obviously bear little relation to the highly detailed maps received from Wakefield, Massachusetts or Greenville, Pennsylvania, or Milford, Indiana. Furthermore the extensive variation in symbolization makes interpretation difficult to impossible. Here two parallel lines stand for a street, there for a river, and elsewhere for railroad tracks. These were simple, because labeled, yet most weren't and were not simple interpretations at all. These are just two of the problems in interpreting the first set of maps. None of these exist in the second set. Fascinatingly, the New York girls dropped into the intimacy of their boroughs for this second map. On the second set there is a standard set of symbols and a standard approach to the completion of the map surface. These are comparable and easy to analyse.

But this would be a paltry gain if there were great off-setting losses. Fortunately, except for the shift in scale on the part of the
New Yorkers, there is no such loss. In what terms? There is no loss of detail to speak of and in some cases there is a gain. In four cases there is an increase in detail.

I turn to the issue of map size. Overall there was a decrease in the amount of paper surface covered from the first to the second set. The point-line-area method, in conjunction with our introductory essays, obviously implanted a fear of drawing too large in the kids' minds. The second set starts out at a reduced scale and continues at a reduced scale. The same area on map one is compressed into a smaller area on map two. There is a decided correction of scale in the outlying portions of the maps. Roads on the periphery of map one represented by an inch, now becomes two inches, while those in the center have decreased somewhat in length. Making the kids aware of the problem of scale may have introduced a tendency to over-correct the faults they themselves isolated in the questionnaire.

To summarize these first three points we note that: 1) Amount of detail remained much the same; 2) Amount of paper surface covered decreased in the second set; 3) Scale was consciously corrected, perhaps over-corrected, in the second set.

I will deal with two other issues before moving on. The first of these has to do with areal discrimination. With the exception of the New Yorkers who dealt on their first map exclusively with areas, there was no map in the first set on which any areal phenomena whatsoever was distinguished. Stressing this areal aspect of the mapping task with the use of tracing paper overlays, forced all the kids to map their home towns into areas. Many of these were prefatory "North Side, South Side" as suggested by our example, but others were imaginative and insightful. This aspect of the second map set was an unqualified gain. Secondly there is the question of general appearance. The second set of maps was decidedly ragged in many cases. Much of this I suspect (this was subsequently to be confirmed by the kids orally) was due to having to map the same area twice in succession. In many cases obvious love had been lavished on the first map. This was not the case with the second.

I feel confident in making the following statements. They result from the foregoing criteria richly larded with hours of contemplation of the maps in question. If the first map was too good (copied?) the second map was worse; if the first map was good, so was the second; if the first map was not so good, the second map was better; if the first map was terrible, the second either remained terrible or improved drastically; if the first map was of all of New York, the second map was
Figure 4.4 Bobbi Seward's first hometown map.

Figure 4.5 Bobbi Seward's second hometown map.
Figure 4.6  Wanda Pierce's first hometown map.

Figure 4.7  Wanda Pierce's second hometown map.
Figure 4.8 Erica Cruz's first hometown map.
Figure 4.9  Erica Cruz's second hometown map.  (assisted)
Figure 4.10  Sven Heller's first hometown map.
Figure 4.11  Sven Heller's second hometown map.
Figure 4.12 Phylis Gordon's first hometown map.

Figure 4.13B The areal overlay to Phylis Gordon's second hometown map (Not to scale of skeleton)
Figure 4.13A  Phylis Gordon's second hometown map: The Skeleton.
of a single borough or even smaller part. These judgements are essentially feelings, but they are backed by all the evidence. To conclude: the use of the point-line-area method increased comparability enormously and hence the usefulness of the maps to any scientist; it underscored areal discrimination as a part of mapping; it caused scale to be considered consciously in the mapping process; it did not materially effect other aspects of the map such as amount of detail, size of area covered and so on. It was, in sum, a rousing success.

IV

Of course that was only the beginning. The second mailing followed hard on the heels of the first, and integral to this second installment were refinements of the technique. Prior to drawing any maps the students were asked to examine Environmental A. They were provided with a rationale for the use of this symbol system, and the division of the symbols into points, lines, areas and attributes. Subsequently the students were asked to list as many types of points, lines and areas as they could. They rose manfully to the task. The average number of types of points listed was 14.2 (range: 9-27), types of lines 9.4 (range: 4-14), and types of areas 5.2 (range: 3-11). This task set them up for the use of overlays in the third map of their home town.

So what happened with this third map? With one exception all classes of mappers produced their best map on this third try. The exception: if the first map and the second map were both terrible, the third map was not drawn. Again, the New Yorkers were unique: four of the five, once again, attempted to map the entire city. But this time they tried it using the point-line-area approach. The maps were a mess, but I applaud their attempt at this horrendous task. Given the city's spread over three islands and a peninsula, the task is next to impossible. Only one (Cruz) continued to map her borough.

In making this assessment of improvement from the second to the third set of maps I utilize the same criteria as from the first to the second. The networks (the points and lines) show little actual change. They are, if anything, slightly better connected and, in every case, the number of points and lines has increased. The scale corrections inherent in the second set were incorporated into the third at an increased size. But when we turn to the overlays a big difference becomes apparent. The average number of tracing paper overlays per kid was 2.7 (range 1-4). In many cases a different sheet was used for each type of symbol. Table 4.3 shows the numbers of symbols used in each class.
TABLE 4.2

SYMBOL USAGE ON THE THIRD HOME TOWN MAP

(n - 20)

<table>
<thead>
<tr>
<th>Points: Average</th>
<th>27.6</th>
<th>Range: 11-61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lines: Average</td>
<td>8.4</td>
<td>Range: 1-12</td>
</tr>
<tr>
<td>Areas: Average</td>
<td>9.17</td>
<td>Range: 2-24</td>
</tr>
<tr>
<td>Attributes: Average</td>
<td>17.1</td>
<td>Range: 8-83</td>
</tr>
</tbody>
</table>

The figures are for total number of symbols used, not types of symbols. Thus the average number of point symbols does not mean that 27.6 different symbols were used. These are amazing figures. If the averages are astounding, the upper limits of the ranges are overwhelming, particularly when compared with results from similar previous work. It is patent that the kids enjoyed decorating their maps with these symbols. It is likewise patent that they are talking spatially. They are speaking to anyone who wishes to read these maps. The attributive symbols were, if nothing else, a hit and it is not surprising that they were. If any had drawn maps before they had never had the opportunity to say what they could say now. Particularly popular symbols in the attributive class were those expressing constriction, cleanliness, crowdedness, dirt, social status, joy, "loved it," wowness and personal. The paucity of line symbols reflects the fact that the streets had already been drawn on the skeleton. What more can you say about a street? Few kids bothered to discriminate sizes of streets.

What has happened? Sum the averages and you discover that the map surfaces — aside from the basic skeleton — have been discriminated on the average of 62.8 different ways. For kids, most of them on their third map ever, that is amazing. And very exciting. I think the general summary statement of the nature of change from map set two to map set three is simple: improvement.

Thus we come to the strangest of all our exercises: the mapping of London prior to the visit. David Stea had tried, but never published, something similar a few years ago in Brazil. (Stea, 1971, 2). He called it predictive morphology. Our own interest in the subject resulted from some points raised by Jeremy Anderson in the seminar where I first met Bob Beck. The discussion had to do with the ability of an American to generalize from his home town to other American cities. Could a man raised in Cleveland profitably exploit his urban experience
Figure 4.14  David Abrams' third hometown map. A: skeleton, B: points, C: lines and areas, D: attributes.
Figure 4.15 Susan Lincoln's third hometown map. All attributes shown on a single sheet.
Figure 4.16 Marina Giaconda's third hometown map. A: skeleton
B: attributes.
Figure 4.17  Sven Heller's third hometown map. A: skeleton, B: point attributes, C: line attributes, D: area attributes.
Figure 4.18 Phylis Gordon's third hometown map. A: skeleton, B: point attributes, C: line attributes, D: area attributes.
Figure 4.19 Joy Gray's third hometown map. A: skeleton, B: points, C: lines, D: areas.
Figure 4.20  Tracy Cummings' third hometown map. A: skeleton, B: point attributes.
in Atlanta? Anderson's point, with which I agree, was that he certainly could and with great justification, for there are enormous similarities between all American cities. Given the location of the city hall, it is not hard to predict the location of the city library and so on. Thus, what is the likelihood that an American drawing a map of London will reproduce his own environment? With this question in mind we set out to design this exercise. Also involved was the use of the new mapping method for the first time outside the context of the exhausted home town situation. (Once more with that gambit, and we'd have slit our throats, project-wise.) Worried, lest they have nothing to put on the map, we provided Group L with an exhaustive list of London place names. This list would also be used in the mapping of London itself, and early acquaintance with it would be valuable. In drawing up the list we made several unintentional omissions, one horrendous; we left Hyde Park off the list of areas!

So what happened? Well, to begin with, only ten kids bothered to try the map. It was so obviously insane. That they were tiring at the end of a long questionnaire schedule is not the reason, for yet to follow in the same mailing was the Ideal City map (which thirteen kids drew) and the first part of a very long psychological questionnaire (which nineteen kids answered). No, the reason so few drew the map was because it made so little sense. But the kids that did it went all out. First of all, all place names were used, not by each mapper (though three did use each place name) but by the entire group sooner or later. A total of 231 points were mapped, 55 lines and 62 areas, or a grand total of 348 items placed on the ten maps. That's 34.8 items per map, which is not bad for a city never seen. Furthermore, six of the mappers, all on their own, added Hyde Park to the list and placed it on their maps. In the following table a simple content analysis is displayed for places mapped by more than five kids.

**TABLE 4.3**

CONTENT OF THE PREDICTIVE MORPHOLOGY OF LONDON
(Numbers of students mentioning place, n = 10)

<table>
<thead>
<tr>
<th>POINTS</th>
<th>LINES</th>
<th>AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckingham Palace</td>
<td>9</td>
<td>Thames River</td>
</tr>
<tr>
<td>Piccadilly Circus</td>
<td>9</td>
<td>London Bridge</td>
</tr>
<tr>
<td>St. Paul's Cathedral</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>St. James' Palace</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Lincoln's Inn</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Parliament</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Westminster Abbey</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>G.P.O. Tower</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>National Gallery</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
On the list of places most frequently mapped are many of the most famous names in London. We are not surprised to find that Buckingham Palace leads the list of points, that the Thames leads the list of lines and that Hyde Park — even though not on the list — does the same for the areas. These are names familiar to them. Television, magazines, books, not to mention seventh grade geography, have all implanted most of these names firmly in their heads. But I must confess that I am somewhat bewildered by the inclusion of St. James's Palace and Lincoln's Inn, neither having the sort of notoriety characteristic of the other names on the list. The G.P.O. Tower, while new and less renowned than some of the others, was very frequently mentioned in the brochures and booklets sent to prepare them for the odyssey. In general, then, the lists should not surprise us.

Turning for a moment from the content analysis, let us deal with the issue of the overall shape of the city. Without getting into sophisticated and laborious measures of shape, we can divide the shapes in which the city appeared into three classes: 1) Long and narrow like a cigar (this shape was championed by two kids, one orienting it north-south, the other east-west); 2) An oval, oriented north-south, (one sponsor); and 3) Nearly square, almost filling the paper. The last shape had seven adherents, four orienting it north-south, two east-west, and one presenting a perfect square oriented to the compass. Within these ten shapes, five of them drew the Thames smack-dab through the center of the city, four of them orienting it east-west, the other north-south (in north-south cigar). One kid drew the river slightly south of the center, running it east-west. The remaining two ran the river east-west, tangential to the city, one to the north, the other to the south. The balance of opinion, then, is that the city is elongated in shape running north and south and that the river, running east-west, cuts the city in half. Needless to say, this is accurate regarding the general role of the river in London, and will suffice for shape. (Both these questions are dealt with exhaustively farther on. Compare the trip results with these when we get them.)

Now let's try to place the other content within the shape and around the river. Total catastrophe! As might be expected, there is no order whatsoever regulating the relationship of places on this map. The kids have not placed things on the map as they occur on the lists; nor have they gone from one end of the list to the other; nor have they started from the inside and worked out. Between one map and the next there is no consistency at all. If Buckingham Palace is adjacent to Parliament on one map it is next to the G.P.O. Tower on another and beside the Tower of London on a third. Nor is there any intelligible relation between the River and anything but the bridges and the docks. These are on the River, There is no principle of centrality locating the most important and famous
Figure 4.21  Lana Monroe's predictive map of London.  A: skeleton, B: point and line attributes.
places at the center, nor are they located at the edges. The only place consistently placed at the edge of the city is the University of London, and this is where the kids knew they were staying. Despite extensive orienting literature describing the University vicinity in great detail, extolling its proximity to the British Museum and Madame Tussauds, these places are in no way related to the University.

Group L had absolutely no idea of the ways things were going to be, based on TV images (Parliament along the Thames), orientation and field manuals (numerous images), past reading and so on. Furthermore they had no intention of basing London on an American model. In only two cases does the map of London resemble the map of the home town, and in these cases the resemblance is slight to fading.

More positive conclusions can be drawn from an analysis of the overlays. Comparison of the symbol content for London to that of their home towns reveals that they have great expectations about the nature, if not about the layout, of London. Sidewalk cafes proliferate in London and there are none of these at home. Restaurants are up nine to eleven times over the home town. Historical monuments, unseen on the home town maps, abound. The number of cultural establishments skyrocket from five to fifteen times. The number of amenities in general has risen. London is going to be fun, interesting and enlightening.

Group L is going to Europe for a variety of reasons, but certainly one of them is to experience environments as much unlike their own as possible. If the kids in Group L thought the European cities they were about to visit resembled those in America to any serious extent, would they have been willing to lay out the necessary jack? In this light we can make sense of the apparent chaos of the predictive morphology. The very fact that it is chaotic is an indication of the nature of their anticipations. These kids know American cities with their skyscraper downtowns and their shopping center suburbs, their freeways and courthouse squares. They have drawn these cities for us. London, to be worth the trip, needs to be different. And that is the way they have mapped it. Had they felt able to predict the morphology of London, they simply wouldn't be interested in going. And yet, somehow they have predicted its morphology — a morphology unlike anything they have known. They emphasize this difference, sprinkling London with sidewalk cafes, museums, restaurants and historical monuments in profusion, things rarely indicated on their home town maps. In fact, would it be out of line to suggest that any information coming their way tending to reduce London to American proportions would be rejected, or suppressed? Judging from their maps of London, this may well be the case.
This question of anticipation was sharply focused during our Group L reunion recently held in New York, and although I am here getting ahead of myself, the tale is entirely appropos. The reunion was held in a suite of rooms in the Commodore Hotel overlooking Grand Central Station and 42nd Street. Needless to say, the streets below us were busy with cars and people as only Midtown Manhattan ever is. Candy Fisher, (of Preston, Iowa, a true whistle stop) expressed great disappointment with the crowds. She wanted to see crowds, crowds such as New York is famous for. She also wanted to see tall buildings. (The Pan Am building was outside one of our windows, the Chrysler Building outside another.) I suggested a trip to the Empire State Building. "Oh, I've been there," Nancy wailed, "I mean tall buildings." Unable to do better in the tall department (she had also seen the World Trade Center buildings), I suggested that for crowds she might visit Grand Central Station at rush hour. That sounded exciting, so at five o'clock we descended into the maelstrom. "Oh, I was here yesterday afternoon. This is where we got off the train from Iowa. I mean crowds of people," she exclaimed as she was snatched from me by a particularly heavy eddy of people. When we were able to get together again I shouted, to be heard above the din, "You mean shoulder-to-shoulder-unable-to-move-so-crowded?" "Yes," she cried as she was once again swept away from me by a current heading for the subway. It also turned out that she was disappointed by the lack of violence in New York. She expected to be shot at least once during her visit, or at least to have her purse snatched. Her desire for the sordid was more easily satisfied than her craving for the tall and the crowded. One man puking his guts out in a Grand Central entrance was sufficient for that. Dubuque, the big city for Preston, had been much more impressive than New York, simply because she had heard little about the height of buildings and the sizes of the crowds in Dubuque and that was all she knew of New York. In fact, she characterized the Public Square in Dubuque as thrillingly dangerous, and this in spite of the fact that in my investigation of Dubuque I can find no serious, and little minor, crime in the Square. To justify her trip from Preston to New York, she needed to see something that she had not seen in Preston and Dubuque. She wanted to see buildings lost in the clouds, she wanted a smog that blotted out the sun (not to mention the stars we were seeing), she wanted live violence on every street corner. She wanted, in effect, to have her blood run truly cold, and to have her heart beat truly fast, so that, in some way, she could justify her trip to the big city, to make it really live within her as a quintessentially novel experience. It was this impulse that lay behind the chaos of the predictive morphology of London, a desire to experience a thing truly new.

Yet there was a clearly understood danger in anticipating too much. Too much hope for their experience would lead only to excessive disappointment. Two of the kids wrote little notes on their
Figure 4.22  Sven Heller's map of London. A: skeleton, B: point and line attributes, C: areas.
predictive morphologies. Susan Lincoln, with typical intelligence
divining our purpose in setting the exercise, wrote: "I expect that in
London there will be parts which are just like any typical American city
and there will be parts which are very old." Half her heart said, "Whoa,
don't get excited," while the other had whispered, "Yes, it really will
be different." It was this whispering voice that shows up in her maps.
In London she maps four parks, a palace, and Piccadilly Circus, connected
by a spaghetti-like series of streets. Her map of home consists of a
regular grid littered with shops and free-standing houses, the center
dominated by extensive parking lots, with nary park, palace, or circus.
She knows full well that there are cars in London and thus parking as well,
but who cares, for there are also parks...and palaces...and Piccadilly
Circus.

Sven Heller provided a list entitled "My Picture of London:"

- Mild temperatures
- Pleasant people
- Crowded streets, esp. around Parliament
- Smog covered city
- Wildlife around Thames

VI

The last mapping exercise on this side of the Atlantic involved
the creation of an Ideal City. Dreams of Ideal Cities are as ancient as
the city itself, and the tradition is a grand one. Plato and Aristotle
dabbled with the notion (see Wood, 1971, Chapter 1), Sir Thomas More
laid down highly specific plans for such a city, J. K. Wright's older
brother Austin created Islandia with its ideal capital city (see Wright, 1958),
and I myself submitted for seventh grade social studies a paper called
"Idealurb," containing the plans for an Ideal City to be located at the mouth
of the Rhone on property purchased from an impoverished France. The
literature dealing with Ideal Cities is enormous (see Rasmussen, 1949,
Chapter 3; Gutkind, 1969, passim; Gutkind, 1970, Introduction, et passim;
Lemaguy, 1968; Alexandrian, 1969, 186-189; et cetera). It is within this
tradition that we shall try to see the cities generated by Group L.

With a single exception, none of the Ideal Cities the kids
created resembles even superficially the maps of their home towns. The
exception os Lana Monroe and among her first and third home town maps,
hers predictive morphology and her Ideal City, there runs a strong family
resemblance. None are copies of another but all have similar shapes,
sizes, and internal morphologies. However, eight of the thirteen maps
closely resembled their authors' maps of London. This throws additional light on what was happening with the predictive morphology. Now we can say with some assurance that London was not only to be different from American Cities, but it was to be fairly ideal as well. Turning our attention specifically to the shape and disposition of the cities we can easily discern two separate groups: the geometric and the non-geometric.

Six kids created geometric fantasies, that is drew perfect geometric shapes within which to create their cities. Among these we find an octagonal, a hexagonal, a square and a diamond-shaped city. The remaining two were radial sector cities drawn within circles. The symbols used on these maps are found in Environmental A.

If I were an urban geographer, I think I would have some reason to find these images disquieting. The resemblance between them and much touted models of city organization is unnerving. I draw particular attention to the cities dreamed up by Janine Eber and Phyllis Gordon. Of course, these are not images of actual cities, which are what urban geographers purport to model. Therein lies the unquiet grave. If these are images of ideal cities yearned for by their dreamers, cannot we begin to wonder if the same might not be true of the models created by urban geographers, that they are modeling, not reality, but their dreams? I do not push this discussion, but drop it like a hot potato, as merely suggestive. Nonetheless, from the mouths of babes...

The current furor over ecological relationship between man and his environment can be seen in some of these maps. Phylis Gordon has carefully isolated each residential and industrial sector with parks, noting, "Also, I would have small parks sprinkled all over the Industrial areas," Her city is nestled in the country. Erica Cruz (whose map is reproduced below) writes: "In this city no cars are allowed above ground. Instead, small electric buses or underground subways are to be used." Just outside her city we find a recycling plant. In Paris, on August 1st, Erica spoke further about her Ideal City. She wanted to be able to enclose the entire city beneath a clear dome. In plan, her city resembles Greek colonial cities (as reproduced in Rasmussen, 1949, 10).

Of the non-geometric cities (drawn by seven kids) only three were totally irregular. The other four centered on squares of various characters from which street-arms straggled in an irregular pattern. One of these is reproduced below. This is the effort of Sven Heller of wildlife-along-the-Thames fame. This is quite clearly modeled after a very small American town close enough to a major city to support the bed-room community subdevelopment shown. Note the presence of extensive parklands and the major municipal buildings, and the lack of industry to support all this. Lynch has talked about the bottomless
Figure 4.23 Marina Giaconda's predicted London. A: skeleton, B: attributes.
Figure 4.24 Marina Giaconda's Ideal City. A: skeleton, B: attributes.
Figure 4.25  Janine Eber's Ideal City.

Figure 4.26  Phylis Gordon's Ideal City.
Figure 4.27  David Abrams' Ideal City. A: skeleton, B: attributes.
My Ideal City

In this city no cars are allowed above ground; instead, small electric buses or underground subways are to be used.

Figure 4.28 Erica Cruz's Ideal City. A: skeleton, B: attributes, C: more attributes.
Figure 4.29  Sven Heller's Ideal City.
landmark; this is the unsupported city. Heller is a resident of Milwaukee, Wisconsin.

Probably a great deal can be inferred, in one direction or another, from the Ideal Cities to the actual homes, or from the homes to the Ideal Cities. Thus Miss Cruz, the only one to speak of mass transportation and subways in particular, lives in New York. Undoubtedly a great deal could be made of this sort of thing, but not here. I lack the intimate knowledge of home environments needed to make these judgements.

However something can be said about their desires regarding urban life. Only David Abrams drew an Ideal City capable of supporting a large population. The rest are what must be referred to as villages or very small towns. Furthermore there is an insistence on the inclusion of large amounts of parkland, fountains and other typically European urban amenities. The kids in Group L, whether from experience, or because of the insistence of the mass media see the Ideal City in relatively traditional terms (See Krim, 1972, for an extended discussion of the effects of the mass media in foisting European city imagery on Americans in a brilliant case study of Los Angeles). It is small, it is green, it is clean, it is amenable, and it is surrounded by countryside. In the close resemblance between the Ideal City and the predictive morphology of London it can be seen that this is the image of the city that Group L expects to find fulfilled in London. What happens when these expectations and anticipations and dreams hit the fundamental reality of one of the world's greatest cities is the heart of Project Group L.
PART TWO

THE TRIP
Some books are to be tested, others to be swallowed, and some few to be chewed and digested; that is, some books are to be read only in parts; others to be read but not curiously; and some few to be read wholly, and with diligence and attention. Some books also may be read by deputy, and extracts made of them by others.

... FRANCIS BACON
Essays: Of Studies
EXTRACTS
(Supplied by an Armchair Traveller)

It will be seen that this mere painstaking armchair traveller appears to have scarcely begun to investigate all the wondrous references to travel that might be garnered in all the long Vaticans and street stalls of the earth, where might be picked up allusions without number to this thing called travel. Such is the fate of the armchair traveller. Therefore you must not sob, like a child in the chimney, to find your pet remark on travel not among these extracts which have value solely as they afford a glancing bird's eye view of what has been promiscuously said, thought, fancied and sung regarding travel by a random selection of commentators on the art.

"To travel, to move around - that's the thing. No matter where."

Richard Bissell

"Oh, nothing." He laughed and jumped to his feet. "Come on."
"Where?" said Pooh.
"Anywhere," said Christopher Robin.

A. A. Milne

"During that memorable month I basked in the happiness of being for once in my life drifting with the tide of a great popular movement. Everybody was going to Europe - I, too, was going to Europe."

Mark Twain

"A Day's Ride a Life's Romance was the excellent title of an unsuccessful book; and indeed the journey should march with the day, beginning and ending with its sun, to be the complete thing, the golden round required of it. This makes that mind and body fare together, hand in hand, sharing the hope, the action, the fruition; finding equal sweetness in the languor of aching limbs at eve, and in the first god-like intoxication of motion with braced muscle in the sun. For walk or ride take the mind over greater distances than a throbbing whirl with stiffening joints and cramped limbs through a dozen countries."

Kenneth Grahame
"O sir! you had then left unseen a wonderful piece of work which not to have been blessed withal would have discredited your travel."

Shakespeare

"O how I long to travel back, 
And tread again that ancient track! 
That I might once more reach that plain, 
Where first I left my glorious train; 
From whence th' enlightened spirit sees 
The shady City of palm-trees."

Henry Vaughan

"I do not want Michael Angelo for breakfast - for luncheon - for tea - for supper - for between meals."

Mark Twain

"Lump the whole thing! say that the Creator made Italy from designs by Michael Angelo."

Mark Twain

"They spell it Vinci and pronounce it Vinchy; foreigners always spell better than they pronounce."

Mark Twain

"For my part, I travel not to go anywhere, but to go. I travel for travel's sake. The great affair is to move."

Robert Louis Stevenson

"Though we travel the world over to find the beautiful we must carry it with us or we find it not."

Ralph Waldo Emerson

"Travel, in the younger sort, is a part of education; in the elder, a part of experience. He that travelleth into a country before he hath some entrance into the language, goeth to school, and not to travel."

Francis Bacon
"To travel hopefully is a better thing than to arrive, and the success is to labour."

Robert Louis Stevenson

I traveled among unknown men
    In lands beyond the sea;
Nor, England! did I know till then
    What love I bore to thee.

William Wordsworth

"A man who has not been in Italy, is always conscious of an inferiority."

Samuel Johnson

"A traveller! I love his title. A traveller is to be reverenced as such. His profession is the best symbol of our life. Going from--- toward---; it is the history of every one of us. I am interested in those who travel at night."

Henry David Thoreau

"As an English man does not travel to see English men, I retired to my room."

Laurence Sterne

Boswell: Is not the Giant's-Causeway worth seeing?
Johnson: Worth seeing? yes; but not worth going to see.

James Boswell

"Travelling is the ruin of all happiness! There's no looking at a building here after seeing Italy."

Fanny Burney

"Captain is a good travelling name, and so I take it."

George Farquhar

"I love the looks of you, the lure of you,
I'd love to make a tour of you;
The arms, the eyes, the mouth of you,
The east, west, north and the south of you."

Cole Porter
The Road goes ever on and on,
Down from the door where it began.
Now far ahead the Road has gone,
And I must follow, if I can,
Pursuing it with weary feet,
Until it joins some larger way,
Where many paths and errands meet.
And whither then? I cannot say.
Still round the corner there may wait
A new road or a secret gate;
And though I oft have passed them by,
A day will come at last when I
Shall take the hidden paths that run
West of the Moon, East of the Sun.

J. R. R. Tolkien

"Our limbs, indeed, have room enough, but it is our souls that rust in a corner. Let us migrate interiorly without intermission, and pitch our tent each day nearer the western horizon."

Henry David Thoreau

Christopher, Christopher, where are you going,
Christopher Robin?

"Just to the top of the hill,
Upping and upping until
I am right to the top of the hill,"

Said Christopher Robin

Christopher, Christopher, why are you going,
Christopher Robin?

There's nothing to see, so when
You've got to the top, what then?

"Just down to the bottom again,"

Said Christopher Robin.

A. A. Milne

"There's nothing under Heaven so blue
That's fairly worth the travelling to."

Robert Louis Stevenson
"The Excursion is ended, and has passed to its place among the things that were. But its varied scenes and its manifold incidents will linger pleasantly in our memories for many a year to come. Always on the wing, as we were, and merely pausing a moment to catch fitful glimpses of the wonders of half a world, we could not hope to receive or retain vivid impressions of all it was our fortune to see. Yet our holyday flight has not been in vain— for above the confusions of vague recollections, certain of its best prized pictures lift themselves and will continue perfect in tint and outline after their surroundings shall have faded away."

Mark Twain

"No, Sir, when a man is tired of London, he is tired of life; for there is in London all that life can afford."

Samuel Johnson

"Edward Dahlberg," she says, "says that the only reason we travel is that there is no place to go...That's pretty cute, Dahlberg, but you probably don't even go to the supermarket. I go to the supermarket and it's a Trip."

Richard Bissell, 1968

"Ay, now am I in Arden; the more fool I. When I was at home I was in a better place; but travellers must be content."

William Shakespeare

"The open road, the dusty highway, the heath, the common, the hedgerows, the rolling downs! Camps, villages, towns, cities! Here to-day, up and off to somewhere else to-morrow! Travel, change, interest, excitement! The whole world before you, and a horizon that's always changing!"

Kenneth Grahame

"I pity the man who can travel from Dan to Beersheba and cry, 'tis all barren."

Laurence Stern

"We did not see any buffalos until we passed a station called Brady Island. It was a relief to see the long looked for animals at last, for only those who have felt it can understand what a dreadful thing it is to want to see a buffalo and not be able to do so."

J. W. Boddam-Wertham
If Paris is much in your mind, if it is more and more to you, Concord is less and less, and yet it would be a wretched bargain to accept the proudest Paris in exchange for my native village. At best, Paris could only be a school in which to learn to live here, a stepping stone to Concord, a school in which to fit for this university. I wish to live ever as to derive my satisfactions and inspirations from the commonest events, every-day phenomena, so that what my senses hourly perceive, my daily walk, the conversations of my neighbors, may inspire me, and I may dream of no heaven but that which lies about me. A man may acquire a taste for wine or brandy, and so lose his taste for water, but should we not pity him? The sight of a marsh hawk in Concord meadows is worth more to me than the entry of the allies into Paris. In this sense I am not ambitious. Only that travelling is good which reveals to me the value of home and enables me to enjoy it better. That man is richest, whose pleasures are cheapest.

Henry David Thoreau

"Since my trips have been extensive everywhere,
I've become a much wiser gal;
For I've noticed that expensive underwear,
Can improve a gal's morale.

Cole Porter

"Seeing Scotland, Madam, is only seeing a worse England."

Samuel Johnson

"I tell you what we'll do, Stubbins: it's a game I used to play when I was young - before Sarah came to live with me. I used to call it Blind Travel. Whenever I wanted to go on a voyage, and I couldn't make up my mind where to go, I would take the atlas and open it with my eyes shut. Next I'd wave a pencil, still without looking, and stick it down on whatever page had fallen open...Because you have to swear, before you begin, that you will go to the place the pencil touches, come what may. Shall we play it?"

Hugh Lofting

I think there is a fatality in it - I seldom go to the place I set out for.

Laurence Sterne
"All the geeks blowing about their gicky LSD trips ought to take some of them grown-up pills one day and go on a real trip, like, man, to Alkali Flats, man, like the horned toads all on the hard stuff and the psychedelic rattlesnakes making out with the barrel cacti."

Richard Bissell

As the Spanish proverb says, 'He, who would bring home the wealth of the Indies, must carry the wealth of the Indies with him.' So it is in travelling; a man must carry knowledge with him, if he would bring home knowledge.

Samuel Johnson

Dr. Doolittle: "But what about your studies? You can't very well just take off and leave your university career to take care of itself, you know."
Bumpo: "I shall not be neglecting my edification if I accompany you... My August father, the king, told me to be sure and travel plenty. To see the world in your company is an opportunity not to be sneezed upon. No, no, indeed."

Hugh Lofting

"Farewell, Monsieur Traveller: look you lisp and wear strange suits, disable all the benefits of your own country, be out of love with your nativity, and almost chide God for making you that countenance you are, or I will scarce think you have swam in a gondola."

William Shakespeare

"We all stood in the vast theatre of ancient Ephesus, and had our picture taken. We looked as proper there as we would anywhere, I suppose. We do not embellish the general desolation of the desert much. We add what dignity we can to a stately ruin with our green umbrellas and jackasses, but it is little. However, we mean well."

Mark Twain
"The Sentimental Traveller
(meaning thereby myself) who
have travell'd, and of which I
am now sitting down to give an
account - as much out of
necessity and the besoin de
voyager, as anyone in the class."

All Laurence Sterne

"Travel is fatal to prejudice, bigotry and
narrow-mindedness, and many of our
people need it sorely on those accounts.
Broad, wholesome, charitable views of
men can not be acquired by vegetating in
one little corner of the earth all one's
lifetime."

Mark Twain

"I am afraid to travel much or to famous places, lest it might completely
dissipate the mind. Then I am sure that what we observe at home, if we
observe anything, is of more importance than what we observe abroad.
The far-fetched is of the least value. What we observe in travelling are
to some extent the accidents of the body, but what we observe when
sitting at home are, in the same proportion, phenomena of the mind itself.
A wakeful night will yield as much thought as a long journey. If I try
thoughts by their quality, not their quantity, I may find that a restless
night will yield more than the longest journey."

Henry David Thoreau

"Traveling is soothing to the harried nerves and
sometimes numbing to the brain. The way things
are, a good numb brain once in a while isn't a bad
lookout."

Richard Bissell, 1968
CHAPTER 6

When the White Rabbit in Alice asked where he should begin to read the verses at the Knave's trial the King replied: "Begin at the beginning; go on till you come to the end; then stop."

This would seem to be the last word on the subject of narration in general. For the novelist no dictum more entirely complete and satisfactory can be imagined—in theory. But in practice it is hard to live up to.

Where is the beginning of a story? Where is the beginning of anything? No one knows.

When I set myself to consider the actual beginning of Maxwell Cheyne's adventure, I saw at once I should have to go back to Noah. Indeed I was not at all sure whether the thing could be adequately explained unless I carried back the narrative to Adam, or even further. For Cheyne's adventure hinged not only on his own character and environment, brought about by goodness knows how many thousands of generations of ancestors, but also upon the contemporaneous history of the world, crystallized in the happening of the Great War and all that appertained thereto.

So then, in default of the true beginning, let us commence with the character and environment...

...FREEMAN WILLS CROFTS
The Cheyne Mystery
The dining room was sweltering and the bright glare from the bulbs in the ceiling didn't make it seem any cooler. In the doorway to the kitchen stood a gray metal fan trying its darndest to move the air around. It was just a symbol of something, like man's triumph over nature. Its presence was reassuring, but it was still hot. In the middle of the room was a large wooden table and the three of us were sitting around it sweating, Bob Beck, Ingrid and me. We were making name tags. I was neatly cutting names from a sheet of paper, Bob was putting them into plastic folders with stick pins, and Ingrid was stringing them onto a long skein of bright orange yarn.

It was the 29th of June and the next day Bob and I were going to Europe.

"Now tell me again how we're going to work this?" I asked.

"Well, we get to the airport, we find Group L, we pass out the name tags..." Bob snapped a tag together.

"Jake says there are an awful lot of people in that terminal."

Ingrid looked up. "Maybe you need a flag, you know, something that you could wave around that everybody could see."

"That's an idea. We'll have a flag. The Group L Flag. And Group L will rally around and we'll pass out the name tags. And we'll stand around and get to know each other. We'll be a group before we even get on the plane!" When I was excited, I spoke fast. But then I had a vision of myself waving a flag around an international airport. "Uh... who's going to carry this flag?"

"What's wrong with you?" Bob asked.

"I just don't see myself waving the flag, that's all." I cut out the last name. "What about tags for ourselves?"

"I think you should have special name tags," Ingrid put in.

"Maybe Bob should, but not me. I'm the straight typewriter type." I wandered over to the typewriter to make a tag. "Ingrid, don't we have something cool to drink? This heat is killing me. Boy, if it's like this in Europe!"

For a few minutes we were all busy. The fan hummed and
the hot air eddied around my feet and little green insects flirted with suicide around the bare bulbs in the ceiling. My shirt was nailed to my back with sweat. Out in the softness of the night, kids' voices curled around the street corner and their voices were lazy. For them tomorrow would be like today. For me tomorrow would be...

"Let's go over our strategy again and make sure we know just what the----we're going to do tomorrow." Down in the pit of my stomach something moved around just thinking about it.

"O.K. It's simple. We arrive at the airport and size the place up. We'll be there early enough to have time for all this. We pick a good spot and set up headquarters. One of us has the flag."

"I'll carry the flag," I said resignedly.

Bob didn't notice the interruption. "One of us has the flag and the other has the string of tags around his neck. As the kids come in, they'll see the flag, come over, get their tag and probably hang around talking. Maybe we'll even get to meet some parents. They'll all stay because they want to meet the others and this is obviously the place to do it. It'll be fun."

I grunted. It sounded okay but a small light flashed in the back of my mind. But it was too small a light to matter. "Okay, then let's talk about the bags." For half an hour we worried about the bags. We were each taking two bags, one filled with stuff and the other with project materials. Bob was taking a leather portfolio and I would carry a sisel-fiber book bag. For immediate needs. Paperbacks, Magazines. Dozens of felt-tip pens in bright colors. We shifted things from one bag to another, making sure we'd be carrying equal weight. It was a little thing. But at that point on a hot summer evening, nothing was too little if it meant sweat.

"You're sure you've got enough Checklists? Stereotypes?"

"Well, I don't know if we've got enough, but we've got all there are," I said. I sat on a suitcase to get it closed. When I'd slipped the latch, I stood up. I said:

"We've done all we can. Let's call it a night. Tomorrow's going to be a long day."

"The longest day," Bob added. "Okay, if that's it. We'll pick you up at noon tomorrow. Be ready."
He turned to Ingrid and grinned. "I'll take care of Denis for you. He won't get in trouble."

Ingrid snorted. I said, "Pooh-bah. I'll take care of you!"

"Well, bye-bye. See you in August." He walked out the door and started down the steps. I walked out and leaned on the railing watching him. There was a song on the radio then, tailored for summer sadness. "It's Too Late" was the title. And the refrain, Carole King sang it and made it something special, quiet and slow and still pulsing. As Bob walked down the steps, I hummed the refrain.

He looked back up at me over his shoulder.

"Yeah," he grinned. "It sure is."

There are hot nights... and there are hot nights. This was one of those. We went to bed with the fan and slept with the fan and woke up with the fan. We parted in air stirred up by the fan and until Bob came at noon to pick me up, I sat with the fan. The air was heavy that Wednesday, steamy and thick. The fan was some sort of joke, just a thing to help me believe I had a hand in my own peculiar fate. St. Louis in August had nothing on Worcester in June.

If it was hot in the house, carrying the bags out to the car was something else. It was no day for a tie and jacket so I took mine off and hung them over the back of the seat.

"Ready to go," Bob asked.

"Yep," I said. It was too hot for anything more. Hot air whipped in the window of the moving car, drying my sweat to a gritty mask. It felt marvelous. As we mounted the high hill to the airport, the temperature dropped half a degree and it was Nirvana. Carole King came on the radio and sang our dirge and our only strength. "It's too late, baby, now, it's too late."

At the airport we hid ourselves in the air-conditioned restaurant to wait for our plane and pushed meaningless words across the table at each other. We were just killing time now, and it was dying hard. Our plane arrived and we boarded and shortly after takeoff we landed in New York. It's one of those flights. The air-conditioning never really has time to get going before it has to stop. Leaving the terminal at Kennedy we entered a taxi-cab and the oven of Long Island and in the same time it had taken us to fly from Worcester found
ourselves in the outskirts of Kennedy—at the North Passenger Terminal, home of charter flights.

As a rule, I don't get excited by the size of airport buildings anymore. From the outside, this was no exception. But the inside was another story. Big things, like planes, could get lost in here. It was the size of the Sahara, and just as hot and just as empty. We looked around. This was when we were going to scout out a spot and plant our flag, but in this barn what difference could it make? One spot was like another and both were barren. Even the coke stand was closed.

"Well, Bob?"

"I guess no one's arrived yet."

"Hey, good thinking. How'd you figure that out." I was filled with admiration and covered with sweat. "Look, let's park our bags in a locker and go back to Kennedy. We can find an air-conditioned terminal and hang around watching people weigh in."

"Why don't we stay here?"

"Bob, it's too hot and it's too empty and it's too dead. We'll go and come back in a few hours. There'll be people here and the coke stand'll be open and we'll have lots of time." So we spent the next three hours wilting in the Pan Am building chatting with a Welshman waiting to go back home. At six we took a cab back to North Passenger. As we crawled through the traffic we watched radiators boil over and gazed at the mirages of planes shimmering on the field through the hot air. Nothing was real this Wednesday but the heat.

Almost nothing. We found something else real as we rounded the corner to the front of North Passenger. Things had changed. All along the eternal front of the building were kids, kids alone, kids in groups, kids with parents, kids without, kids dressed up and kids dressed down. Most of them were trying to cool off in the shade waiting out the minutes until departure in a languid desperation. Butts and chewing gum wrappers littered the grass in a carpet already ankle deep and there were hours to go. We paid off our cabby and entered the terminal. The Sahara had become the Pacific. Adolescent heads bobbed and swayed like numberless waves. The coke stand was open. Kids surrounded it like flies on a dead dog. Group L was thirty-one kids in a unit of two hundred and fifty. One unit would fill one plane. There were enough kids to fill a hundred planes in this building.
"Look for red bags. Our tour gives out red flight bags," Bob said.

I looked. There were thousands of red bags. Every kid had one. I looked more closely. They had different names on them. Some help. As we wandered aimlessly through the throng, I noticed a "K" on white paper fastened to a bag. Then an "M" and a "J." These were our kids, but different groups.

"Let's go outside and think about this," I suggested. It was a little cooler outside. We lay down on the grass and caught our breath. There was really nothing to say, so I said:

"Let's go back to Kennedy and catch the last flight to Worcester. Who needs this? I'll do a library dissertation. At least they're air-conditioned," Bob demurred, but he was shaken. Nothing said, but I could tell. Nothing in our most troubled dreams had ever looked like this. Flag? Name tags? I started to laugh.

Bob laughed too. "We've simply got to go back in there and find Group L. It's in there somewhere."

"You've got to change your clothes," I said. Bob had worn a crazy T-shirt. Very sensible with the heat, but definitely not Doctor Beck. The plan we worked out was to see if we could find Group L. If we could, Bob would change clothes and we'd get to work. If not, well, enough time to worry about that later. We re-entered the building. It was seething and bubbling like Blue Devil in a dirty toilet bowl. We stumbled over some M's.

I put on my best smile. "Hi, you're an M. Have you seen any L's?"

"Yeah, about a half hour ago... Let's see, where were they?"

"Over there," another put in pointing. "I think."

We moved in that direction. Gradually a group of four L's came into focus. They were three boys and a girl. They stood and sat in a jumble of baggage. The boys were well dressed awkwardly in the dernier cri of teen fashion: wide ties, flared pants, boot shoes, Edwardian jackets. One of them looked positively nineteenth century with a high collar pushing his chin out into space away from his body. The girl was simply garbed in a plain unadorned dress. They all had hassle written on their faces, hassle with the crowds, the baggage, the
heat, the clothes and in this human whirl, with the aloneness. They might have been immigrants except no immigrant ever dressed so chic.

As Bob hung back I wandered over and opened up with some light witty patter. They livened up, their muscles relaxed and they identified themselves. They were the Indiana contingent: Taylor Nash, Desmond Jencks, Robert Watson and Vanessa Garrison. This information was food for thought, for none of them was high on my list of predeparture mailing returns. Jencks and Garrison had sent a few things back, half-heartedly; Watson had written a letter saying that he was working full-time on something more important; Nash had returned, nothing. Nash was the terror of the four. He wore that look of studied boredom that just barely recognized me as a human being.

"You'll be coming to Europe with us?" Vanessa was asking. I yanked my mind back to the North Passenger Terminal.

"I hope so," I said, "I'm Denis Wood." There was a pause. One of those pauses that swallows everything up. In the sudden silence I could hear my watch ticking. Their faces lost their animation. Rigor mortis was setting in. Nash was opening his mouth and it took forever:

"You're the one who's been sending us those things." It wasn't a question. It was a blow to the jaw. Bile seeped into my mouth and tasted bitter. I took a long draw on my cigarette, one of those futile face-saving gestures. The smoke was acrid in my lungs.

"Yea...well...Dr. Beck...Me...We..." I muttered something and noticed my shoelace was undone. There was nothing to say. For these kids I was just another hassle. I excused myself and departed rapidly in several directions. Bob followed.

Out on the grass it was very cool now, for me. I was almost shivering. My throat was dry and I wanted a coke. I settled for a piece of Bob's gum, and told him the story. We lay around and watched kids. There was nothing to say so I said:

"Let's go back to Kennedy and catch the last flight to Worcester. We've lost. We blew it. It's over. Kaput." He didn't even answer. After a while we got up and wandered around to the sunny side of the building. The sun was huge and flat and poised just above the horizon. Shadows of planes stretched from the field to our feet. The atmosphere was pervaded by the languor that always accompanies a bright day's ending. We hitched ourselves up on a ventilator cover and kicked our
heels against the green metal as the sun lowered itself into another world.
I thought of other suns and other days. I thought of last night's
innocence, the eagerness, the Flag, and the name tags. They were
thoughts of another person, another age, still and sad, suspended,
crystalized in amber.

Time passed and we came down from our ventilator cover and
went back into the terminal. We got our bags from the locker and I
guarded them while Bob went to change. I was standing there watching
the herd when Bob reappeared and stopped at a magazine counter. I
watched him strike up a conversation with two girls. The three of
them turned in my direction and Bob beckoned. People are funny.
Knock them down, and they just stand up for more. I walked over.

"Denis," Bob said, "this is Marina and this is Lana."

"Hi! Wakefield, Mass.?" We shook hands.

Marina tilted her head back. "So you're Mr. Wood," She
looked at Bob. "And you're Dr. Beck...talk about stereotypes. You're
really Dr. Beck? Why I thought you'd be at least fifty, and, well, you
know, a doctor and all." Janet was a big girl, buxom, long dark hair,
flashing vivacious eyes, very Italian, very animated. Lana was short,
bright eyes, quick, easy smile, comfortable looking, at ease.

"Yeah," she said. "I thought so too. You're both so young!"
They had the last installment with them and dug them out. The familiar
brown envelopes made their own sunshine at that moment. It was spring
then and butterflies and lemonade. We talked about the questionnaires
and the maps and the stereotypes. They knew the materials cold and
talked about them with ease and familiarity, Marina as it to a favorite
pair of teachers, Lana as if to a couple of casual acquaintances. When
they at last left us to go check in, they left me with funny hearing. The
noise of the terminal, the talking, the shouts of all the kids, the
loudspeakers. I heard none of it. All I heard was beautiful music.

In the next couple of hours we didn't meet another Group L
kid. After checking in we sat and watched the kids go by, trying to
guess which were L's and which weren't. Sometimes we tried to fit
names to faces.

"That must be David Abrams. David Abrams's got to look like
that--Oh no! That couldn't be Janine Eber. Could it? But she does
look studious. O, Bob, please, she can't be in our group...Wow!
Could that be Daisy Perez? How do you see Daisy? Coy or svelt?... Hey, I'll bet they're our Travel-Counselors... Well, they've got our bags... No, they're M's, whew!"

That's how we strangled the remaining hours. They didn't die too hard, but they went on and on. At eleven our tour was called and we lined up at the door screamed to us over the loudspeakers, or what pass for loudspeakers in any airport in the world, those things that turn English into Turkish and Turkish into Swahili. Two hundred and fifty people pressed against the doors and one by one the pressure ejected us outside. I don't know why I was surprised. I mean, I'd walked all around the terminal and had never seen a plane, and yet when I saw a bus in front of me, I was still surprised. North Passenger isn't really an air terminal at all, but the world's largest bus depot. The buses took us out onto the field and after driving around plane after plane came to a stop. Before us was a plane.

It wasn't too long, maybe the length of the Mississippi and it had fewer windows than Rockefeller Center. The wingtip which passed over the bus roof probably lapped the waters of the Atlantic Ocean. The other was lost in the Long Island Sound. The tail was plain out of sight. After sitting around while a team of mechanics did things to the plane, they let us out of the buses and we walked up the steps into the interior. Perspective lines created by banks of seats took the eyeballs and led them forever down the plane, and when you couldn't see any farther, the plane went on. We grabbed two seats beside an emergency exit. Bob let me have the window seat. He'd already crossed the Atlantic. There was nothing to see outside so we watched kids file by heading for the distant reaches in the rear. There are circumstances when two hundred and fifty kids is not a large number, but this was not one of them. They came in an unceasing flood, like mosquitoes in the tropics. They hadn't stopped coming when one of the tour leaders materialized at our seat, wearing that permanently frayed air of utter consequence they all effect. As usual he was young, immaculately attired, and wise beyond his years with summer tour experience.

He had a problem. They had oversold the flight and would either of us, but preferably Dr. Beck, consider crossing on the first available commercial flight instead of this one? He spoke carefully as if each word was teetering precariously on a wooden stilt. "So you see Dr. Beck, there will be no real delay." I wasn't impressed. His manner would have looked cheap on a eunich in a tough harem. Here it was even less. Bob responded by fluffing out his pinfeathers and looking professional.
"But this is insufferable! I am a scientist studying a tour group on this plane. This flight is an important part of the process under investigation. It is absolutely inconceivable that we should even be approached under the circumstances." The character leaned in closer as if to muffle Bob's voice and not reveal to the passing kids the slightest ruffle in the tour organization.

"But Dr. Beck, let me assure you—"

"Let me assure you," Bob broke in, "that you can more readily take the next flight than I." After a few reconciliatory phrases from his undoubtedly ample stock, the leader left us. Two things were clear. Our attitude had not impressed him, and his had impressed us. It was as certain as the plane was huge that we were seen as some expendable luxury. It's always that way with these guys. When an idea looks good months away from the fact it's promises, promises, but when you're on the job you're just in the way. It was a nice thought to taxi down the runway with. Was it really too late to get off and catch the last flight to Worcester?

A cracked adolescent voice sounded in a momentary silence on the plane. It was singing "And it's too late baby, now, it's too late." Whoever it was was right. It was just a little too late. I looked toward Bob just in time to see a strange figure lurch down the aisle. He was large and dressed for Arctic Warfare. A tan belted trenchcoat with up-turned collar reached to his ankles. His face was hidden by diaphanous dark glasses. He moved like a drunk too gone to stand and as he collapsed into the seat behind Bob, he grabbed the back of Bob's seat to ease his fall. My seat shook as if seized by a personal avalanche. The plane lifted from the ground. The trip had begun.

* * *

Eight hours later England appeared outside my window. I would have known it anywhere. There it was, the cutest little toy landscape you could dream of and all in that green that only happens in England. There are greens and there are greens. There's the soft suggestion of green that tickles the edges of trees before spring breaks loose. There's the green all gold of a cow-cropped hill in the late summer sun. There's the hot stolid green of the rain-forest heavy with steam and dangerous snakes. There's the dark somber green of pine among the silver birch in a New England fall. The green of England has nothing to do with those greens. It's an English green that's gentle without being told and tough without bluster. It's a green that's been there and seen it all, and that's going to see lots more and is still green
in spite of it all. Or maybe because of it. It's a green that makes poets foam at the mouth and tough guys go weak in the knees. You can't touch it. No one has. I almost fell out of the plane looking at it.

We had started losing altitude before we saw England and kept at it. I was waiting for the green to give up and turn the landscape over to the city that must surround the airport, but it never happened. Our landing gear rattled out and we were only yards from the runway and still no city: only cute farmsteads on green. Bang! Thump! We hit the runway and that roar happened and we came to a stop and through the windows we saw the terminal, a small, empty neat little building in the countryside. It was all as if we were being smuggled quietly into the country so that no one would know we'd arrived. We filed off the plane and stood in line for immigration. Our's was the only plane on the field. The air was clear, and cool, and felt the way you always knew that green was supposed to feel.

Immigration was a snap. So was customs. We filed out of the building into the same marvelous air and headed for our buses. Everything was calm, cool and collected. Our Unit Director shook his bottom self-importantly down the line and headed straight for me. He shouted:

"Denis! How was your trip?" He grabbed my hand and did things with it. I began to worry. He was too friendly. He wanted something. He chatted about how nice the airport was and isn't customs a snap and:

"We're short a courier, some little mix-up, nothing really." It never is anything really with these people, just always some little new way to break your back. "How'd you like to take your bus into London to the dorms for us?"

"Well, you know I wasn't supposed to take on the bus until Venice. I've never been here before. What's involved," Nice Wood, always glad to help out. And completely out-manuvered.

"Of course I assume you can read a map. Now here's your route shown in black," as he unfolded a map and plunged into one-way streets and tricky turns and complex roundabouts. I let him talk.

"How about Bob?" I interrupted. "He's been here before."

"Well," cough, cough, shuffle, tap, "Bob is talking to the Director now and I sort of hoped to have him on my bus. I've got to talk to you guys sometime and get some idea of what you're planning—"
"What are you talking about?" I asked. "You know as well as anyone what we're going to do. You want me to take the bus in, okay, but cut the crap for God's sake." I grabbed the maps and papers and boarded the bus. "And no patter," I added, "That's out."

"Okay," he shouted, "but you've got to read what's in your hands about the bags, lunch, checking-in, out and all that." He waved at me. Everything was wonderful. He had his courier for the day. I turned to size up my bus driver. She was formidable. "Know where we're going?" I asked in my brightest charming-little-boy manner.

"Nope," she replied.

"Know how to get to King's Cross?" I tried.

"Nope."

"How 'bout London?"

"Never heard of it."

"Ah, gwann," I said and turned my attention to the microphone. Our driver turned it on and I turned to address the group.

I just barely had the mike to my mouth when from the back of the bus came an exaggerated groan followed by: "Ugh! Not him!" It was a witticism intended for bus consumption and the bus knew it. A lovely wave of titters swept from the back to be smothered only a couple of rows away from me. Yeah, the trip had begun and it was too late, baby.

The trip into London was my first experience with a tour bus. You've got to try one for a deep understanding of our idea of civilization. In the very front of the bus, suspended like an isolation booth in front of the rows of four across, is what the trade sharpies call "the hot seat." The courier sits in this in total control. Right beside him is the driver and directly in front is the microphone, radio, and PA controls. Also the windows and the road and an overflowing ashtray. Your professional courier mounts the bus, counts his charges, settles into his seat and lets the driver start. He uses his left hand to direct the driver, turning him this way or that with a wave of his hand. With his right hand on the mike he delivers an unending flow of vital information about the country or city you're in. His eyes are on the road alert to signs and traffic lights and traffic conditions. He knows his patter like he knows the road, to its tiniest turn, and both are delivered in the same
flat, bored, tired manner. His back is to his audience which reads him loud and clear over the scratchy PA system and knows him only as a voice endlessly saying things like "thus in 1102 King Thurian passed the law establishing the use of straw for mattress stuffing" or "this region is the world's eleventh largest packer of baby cucumber pickles in addition to its leading role in the manufacture of rose hips." He's a professional in that he never misses a turn or forgets a fact. He's also an absolute dictator, a bore, and necessarily a man of less than passing interest. The seat I was in was his seat. It was comfortable.

All this I knew from reading the courier manual. I also knew that this was the time for the introduction-to-England talk. Only three things kept me from picking up the microphone and playing courier. I didn't know where I was. I wouldn't have known anything about it even if I did know. I was scared. That microphone scared me. It sat there on its hook looking at me out of its many faceted insect-eye saying, "Pick me up. Talk to me. Hold me." I took a peak at the kids on the bus. Were they waiting for a spiel? Most of them were asleep. It would have been cruel to wake them. I let them sleep.

Outside the window England was whipping by. We were driving on the left along a narrow road. At home it would have been a lane, but here it was carrying heavy traffic. We'd pass through a tree tunnel of leafy green and then tall narrow row houses lined the road with skinny yards that ran right down to the passing traffic and all alive with roses. England, my England. It was not a disappointment. This was the England of Holmes, the England of French, and Cuff and Thorndyke, the England of Elizabeth and Darcy and Emma, even the England of Wart and Lance and Toad and Mole. A group of school children flashed by. It was all true. They did wear ties and sweaters and those funny jackets and roses did bloom on their faces on either side of smiling mouths. The books hadn't lied.

I wondered about those school children. What were they doing on the street? They must be either going or coming from school. That meant it was either morning or noon. It was bad enough to be lost in space. I asked our driver for the time. It was noon. I figured back. One hour on the road so far, eight on the plane, eleven or twelve at Kennedy, four from getting up. Let's see, gee, that's almost twenty-five hours so far. Great. You can add, Wood. No wonder I can't tell a rose on a face from a rose on the bush. I dug out a cigarette and shoved it at my face. No good. I put it back and fell asleep.

The driver woke me up. She looked like she'd been through this six thousand times. "Well, this is King's Cross. Where from here?"
I snapped awake and sat up stunned. We were in some urban nightmare. I fumbled for my map. Blankety-blank driver. I figured she knew, was just putting me on. I found King's Cross. There we are, Okay, look for street names. Names? Where do these blankety-blank English put the blankety names. Don't panic, Wood. If you get lost all they can do is laugh. Ah, street names. On the corners of buildings, Okay.

"You want to turn left at the next intersection and then right after two blocks." Wasn't I the cool one. The bus just made it around a tight corner and pulled out into Cartwright Gardens, a crescent of buildings around a half-moon, railed-in green with tennis courts. Facing the crescent was a row of tall, dark buildings with all the character of a city jail. These were our dorms. The assistant dorm organizer boarded and told the driver where to go.

"Well, you're all late," he began turning to me. "We'll dump your kids, pass out meal tickets and get them over to the College of Pharmacy. They've got to move if they want to eat. Keep a couple of boys and the male TC's and we'll get the luggage truck unloaded. It should be here any minute." He picked up the microphone and made the appropriate announcements.

Off the bus. Everybody off to the College of Pharmacy. Hold it, there. How'd you like to help unload the luggage? You wouldn't? Good. Let's do it. Nash, Watson, Jencks and three TC's; Jaeckel, Aiken, and Lenz. We threw luggage out of the bus. Then the truck. Off the sidewalk, into the dorm. "Get your boys off to lunch or they won't eat. We'll finish," A thousand bags for all the boys on the plane. Commonwealth Hall was nifty, dark, painted in institutional vomit. "Okay, Denis, thanks. You too Bob. Nice to have you aboard," Good boys. That's what we were. We grabbed a bite to eat and I went up to bed and passed out. Pow.

* * *

At six p.m. the alarm went off. I threw my feet to the floor and dug a Camel out of a very tired pack. I smoked it leisurely in the half-light of the curtained room. The bed was a pip. It wasn't long enough for a full-grown midget and came with four gray Army blankets. There was a night stand with a swivel neck lamp and a ten watt bulb, the sort that throw around just enough light to cause serious eyestrain if you try to use it. There was a desk with drawers and a chair and another chair to lounge in if you were a lizard or had guests. Fat chance of that. I put my shoes on and shuffled down the corridors to the john.
Royal Doulton toilets. At home I have a pair of Royal Doulton salt and peppers. Here I get Royal Doulton toilets. In another room are two showers and a tub and four sinks with spring handles. Waste not, want not. I strip and shower. The shower head's a pip too. Shave. Try to get the body up for a long night of pep talks. Downstairs in the cafeteria they've set aside two tables for the tour. At other tables students of the university eat. I try to remember that I'm in the University of London. All the cafeteria help is Portuguese, short smiling girls. One of them has a big smile for me and I smile back. I sit down and stuff my face with the assistant dorm organizer. He tells me how much better the food is in this dorm than the others. If only I could see it.

More splurging with the ten watt bulbs. Some Group L boys are at another table trying food and pushing it away half-eaten. Nash, Watson, Jencks and Jaeckel their T-C. Two other Group L boys, a young dainty one and a huge flat-faced fat one, eat alone. At least there's milk and good coffee. I have a cup and relax with a cigarette. How am I going to get to know these kids, I wonder. How about eating with them, Wood? There's a start. Good thinking. I walk upstairs and breathe in the clean wonderful air of Cartwright Gardens. The sky is yellow and rose and in the trees around the gardens birds are putting on a big show. It's nice and quiet and makes me think of bed and Ingrid at home in Worcester.

The assistant dorm organizer joined me and we strolled through broad somnolent streets and passed hushed introverted green squares to the travel-counselor briefing. The room was big and well-lighted and tall casement windows opened onto the street. The smokers were clustered near the windows and I joined them. There was quite a crowd. We all introduced ourselves and I listened hard to catch the names and make sure I knew who my T-C's were. Then the tour staff took over. They were all young and all immaculately attired and their faces were shining with an eagerness that didn't quite hide their boredom and their inflated sense of self-consequence. They wanted to tell us how wonderful the next thirty-three days would be if we all worked as a team. They reminded me of balding tires and I closed my ears and let my eyes study the Group L T-C's.

Miss Germaine Bloch was a large lady somewhere in her late thirties or early forties. She had a jaw that was a jaw and when she was being determined it was more jaw than any one person needs. Formidable, I'd have called her, but instead I called her "Miss Bloch." She was the leader of the New York contingent, some of whom had been in her Girl Scout troop in past times. She also had attached to her group two Independent Registrants (I-R's, remember?) from Wakefield, namely Marina Giocanda and Lana Monroe, the girls from the
airport. In terms of returns on our predeparture materials, it was our best home town group (H-T's, if you recall). Miss Bloch looked a stern disciplinarian. I had absolutely no doubt that she was, or that she knew it. She had a role, and she would play it. My gaze wandered.

It lit on Mrs. Needham, a sparrow of a woman, thin, bright, perky. She smoked incessantly and through her smoke I could catch gleams of intelligence in her eyes. She had about her an air of impatience; perhaps it was just with this meeting. She wanted to get out and walk around and soak up London. In her gestures there was disdain. She knew the score, she was an adult, let's stop the twaddle and get on with it. She led the Milwaukee contingent. This consisted of two boys and them alone; Heller and Prinz.

Physically, Omar Lenz bore some resemblance to Mrs. Needham. Both were thin. But Omar Lenz also had as much Adam's apple as Miss Bloch had chin. He had a strange growth on his body that I subsequently identified as a camera. It was a part of him, perhaps the most important part of him. He had an electric smile that could light up a room. He looked pleasant, but dull like most people consumed by cameras. He led the Connecticut group, which consisted of two girls, Cummings and Johnson, but to beef up his group he'd been given three I-R's: Montaigne, Abrams and Portman.

Cliff Jaeckel was a compact solid friendly looking person whose features were also stamped with impatience. Maybe he had reason since this was his third summer tour. He wore an air of languid competence as if he didn't have a worry in the world. His chin, too, was remarkable and whenever he said something serious it stuck out like a piece of granite and his eyes flashed daring someone to contradict him. But when he smiled it receded and his eyes twinkled and you noticed that he had dusty blond hair. Cliff led the Indiana group, the group that struck terror in my heart at the airport, the group that razzed me on the bus, the group that grumbled as they unloaded luggage. He also had been given three I-R's, all girls: Eber, Lincoln and Noyes.

At last my eyes rested on the Aiken twins. They had taken seats in the very back of the crowd and looked comfortable and very dull. Mr. Aiken was a big man, big-boned and big-mouthed and big fisted. His voice was also big, and when he spoke he boomed. But this evening he didn't speak. Around his mouth was that hint of a smile that made him one of those hot shot practical jokers. His twin was a very small woman and a very silent one. It was days before I heard her speak. She seemed to shrink away into the space that surrounded
her brother like a wall. For her it was enough. It would have to be. They led the biggest H-T group, mostly upstate New Yorkers, with three I-R's, girls, two of them from Iowa. Of the nine kids in this group only two had bothered with our predeparture things. I looked at the Aikens and listened to a buzzer ring deep in the corridors of my mind. I said, "Watch out. Shoal water ahead."

The meeting terminated with some desultory questions and answers. The T-C's filed out heading for a big night at Piccadilly or Trafalgar. I wandered back with the staff to their rats nest to iron out a schedule. They shed their jackets and their ties and the layers of honey worked up for the T-C's. They were young, tough, cynical and in control. They jumped on the telephones and called Belgium. Some courier had left his luggage behind. Hi, how was the crossing? You check. We'll check. Unit this. Group that. Someone else started putting pins in flashy colors on a map of Europe. It was a game for them and they'd seen too many movies to play any way but real low key.

"Hey, I hate to break in like this, but I need some help," Heads turned my way. "I've got a map session tomorrow and I need a room with some tables."

"Look, Wood, we'll be glad to help in every way, but we don't know anything about this." Sincerity dripped from every pore.

"Well," I said, "According to this memo, attention all Dorm Organizers, blah, blah, blah, we're scheduled for four sure, maybe five sessions in London. What does this mean 'Dorm Organizers are requested to make rooms available for this special project. All staff members are requested to help Denis and Robert to make their task a success?'

"Well, Denis, I'll tell you how it is with us. Those are words. Let's be realistic. I don't think any of us in this room - except maybe yourself - have much faith in your research. We're not sure that this summer - if ever - is the time for it. You're on your own here. I mean a summer tour's tough enough—"

"Yeah, yeah. Okay, tell me this. When does someone with authority greater than your's show up?" I was too tired to run their gauntlet.

"Ah, Denis," the Dorm Organizer gently said as if to an errant but otherwise nice child, "I don't think you quite understand. I am the top authority for the tour, of course, in London. We're saying—"
"You said it. When does the European Director get here?"

"He'll be here in one week — look, Denis, don't make trouble. You could get me mad—"

"I wouldn't want to do that," I said standing up. "What do you do when you get mad? Snarl at a tame T-C?" I was past caring. Some fun this trip would be. All we were was additional hassle nobody needed. We hassled the kids, we hassled the T-C's, we hassled the tour, we hassled each other, we hassled ourselves. Was anything worth it? It was a nice thought to steam up about on my way to bed. Any other day it would have kept me awake for hours, tossing and turning. Not that night. I hit the pillow and was out.
...When I got to London my pocket was about empty, and I found that I must turn my hand to something for my living. Driving and riding are as natural to me as walking, so I applied at a cab-owner's office, and soon got employment....The hardest job was to learn my way about, for I reckon that of all the mazes that were ever contrived, this city is the most confusing. I had a map beside me, though, and when once I had spotted the principal hotels and stations, I got on pretty well.

...SIR ARTHUR CONAN DOYLE
A Study in Scarlet
The morning dawned bright and early, like around 3:30. I got up and closed the curtains and jumped back in bed. Four hours later I dragged the carcass out of bed and made it ready to face a long day. English breakfasts are famous. Maybe with reason, but you couldn't prove it by me. Mine were blah. But the marmalade was real and the coffee was strong and that went a long way towards making it up. I was out at the bus by 8:30 and it was a glorious morning with the promise of a blistering day. The kids started arriving and Bob and I were busy passing out the name tags. We had to fill out a bus seating chart that morning and the tags would help us keep the names straight. We knew the names cold and for each name we'd memorize addresses and other pertinent to useless information. The only problem was fastening the names to faces. At 9:00 all were aboard and name tagged except for David Abrams. He was sound asleep in his bed. All along the line of busses, guides were getting on and the busses were pulling out into the traffic. Our's was last in line, but long after the bus in front of us had gone, we were still sitting there waiting for our guide.

We were sitting there at 9:10. We were sitting there at 9:15. At 9:20 the heat took over the bus completely and we mostly straggled out to the sidewalk for some fresh air. At 9:25 Josephine arrived. Breathless. We climbed back on the bus and listened to her panting into the microphone. She was our native guide.

"I'm terribly sorry to be so late," she began in clear English tones, "but I wasn't called up until 8:30 and I live at some distance. Let me welcome you to London. We're late starting so we'll not be able to see Westminster Abbey this morning." Groans of disappointment from the bus. Pause. "Perhaps we'll be able to see it this afternoon." Cheers.

English tour busses are lovely. From armrests to roof they are nothing but plate glass. The view, of course, is amazing, but so is the greenhouse effect. Slowly the bus turns into an oven that roasts you alive. All you need is basting to provide you with your own lunch. By the time Josephine had arrived, the bus was perfect for tropical orchids. The tour just made it hotter.

Maybe it was London. Maybe it was just being in a big city. We turned left onto Maile Street where Josephine pointed out the Senate House of the University of London. It wasn't much to look at — just a huge grim building probably covered with pigeons — but all the kids took pictures. Click-click. We did a song and dance down Montague Place and on around Bedford Square and poked in and out of a dozen tiny alleys until Josephine invited us to break our necks looking up at the Post Office Tower. Click-click. She delighted our ears with some patter about the
number of antennas and the height of the building in feet and then everybody photographed Centre Point and a theater showing Hair. Click-click. Centre Point looked like any steel and glass job back home, but the kids photographed it anyhow. And then we were on Oxford Street jostling traffic and moving faster than an ant — but not much faster.

I was delighted to know that we could buy jeans on Oxford Street. Josephine pointed out the shops with sales on, and the kids took pictures of them and wondered when they'd be able to get back and pick up some of those exotic pants. We passed a thousand stores on Oxford Street, from down-at-the-heels jewelry-pawnshops to department stores with plate glass windows filled with the very latest fall fashions. Josephine took the words right out of my mind: "This is just like your Fifth Avenue." Was that supposed to make us feel at home? Everybody took pictures.

"Look! A Bobby!" somebody shouted, and the bus listed as all the kids rushed to one side to click-click a bobby.

"Take a picture for me? Please!!" And one kid would hand her camera to someone on the window side who would press the button while holding the camera smack against the window. A bobby had all the excitement of a nude cannibal chomping on a leg.

Josephine's voice rose above the sound of cameras: "There you see a real rag-and-bones man. There are very few of these left in London," and all the kids would rush to the other side of the bus to click-click and use each other's cameras. God could have created another earth in the time it took us to reach Hyde Park. The heat created mirages in the distance as we turned onto The Ring. Hyde Park was as flat as a warm Coke. Or maybe it was sitting up so high in a bus. The Serpentine looked like a stagnant stream and I marked off Hyde Park as something I was dying to see. It made me think of my high school football field in the summer time. Josephine told us all about Rotten Row and all the kids photographed a street. Wow! Travel is so broadening.

"To your right in the distance is the Albert Memorial," but the rest of her remarks were lost in a fury of camera work. I wouldn't have photographed the Albert Memorial up close, and at this distance it was just a blot. Maybe the kids had something at that. Kids were frantically changing film. They might miss a car, or a person walking to work. We wouldn't want that. Click-click. Click-click. The narrow streets of Chelsea were lined with small exclusive shops and plastered with the sort of late-morning loungers that effect the drinking of expresso from china cups on the street among the tabby cats soaking up the sun. We had plenty of time to photograph them all since the bus advanced with the rapidity of a derailed train.
"Off to your right among the trees you see the Chelsea Royal Hospital," and the kids raised their cameras and shot the trees. We emerged onto the Chelsea Embankment and picked up speed along the river. Josephine pointed out the Battersea Power Station across the river and the kids shot that. Con Edison should take lessons from these English native guides. They can make four black chimneys something to see. We scouted past the Vauxhall Bridge and the Tate Gallery and wasted some more film and heard some more clicks and then we were crossing the Thames on Lambeth Bridge and London was suddenly huge and the river was very wide. We made a left on the South Bank and came to a stop behind a line of buses a mile long.

We even got out.

It was a ten minute stop to click-click the Houses of Parliament from across the Thames. For a while I'd forgotten we weren't the only tour in London, but this stop made it clear what a small part we were. There were hundreds of tour buses lined up to let people click-click to their hearts content, and the people were of all sizes and shapes and ages and nationalities and spoke a babel of languages. They were all pointing cameras across the seamless vastness of the gray river at a huge building of neo-Gothic grotesqueness, remarkable mostly because it was famous and famous mostly because it was heart of a once endless empire. I put a hand on my shoulder. Calm down, Wood, they're human, just like you. Okay, okay. I leaned on the parapet and looked at London. All I saw was a big dirty city. Maybe I'll come back and see it with Ingrid. Maybe...


We were on our way to the Tower of London. I was sitting next to David Abrams counting my money. For a really nothing reason or so, none of our kids had managed to change money on the previous day, like arriving late in London and rushing for lunch. They couldn't change any today either. No time. So while they all went and toured the Tower, I'd agreed to change it for them. I had three hundred dollars and was checking my records. I wanted to know who changed how much. It might be a clue to their character. David watched. After a while I put my things away and we talked. David was the skinniest boy I had ever
seen and he wore braces, bright shining sun-catching braces, on his teeth. His skin was a pale olive which he called dark. His predeparture maps were splendid and I had expected...who knows what? I was put off by his appearance at first and sort of shied away when he opened his mouth, but what came out of it was pure gold. David was witty, quick, urbane, everything, in fact, you expect a precocious Jewish kid from a big city to be. I don't remember if he had a book with him on the way to the Tower, but I never saw him later without one. He felt he had established his travel rhythm: up late one night, sleep late the next morning, regular third day, but so tired on the fourth he'd stay in bed that morning, and so around and around. David looked at himself, and it wasn't just adolescence looking.

Suddenly we plunged into a vast parking garage. We had snuck up on the Tower "via a back route" as our native guide put it. "All out. Follow me please. I'll hold my umbrella up. Follow my umbrella."
That was the cold breath of vast crowds to come breathing. As we approached the Tower, Josephine started telling us its history. Look, I love castles, but somehow this wasn't the way to see this one. Not only don't I like seeing things in herds, but the herd was more interesting than history.

With one eyeball on the umbrella, my other eyeball watched Watson and Jencks separate themselves from the rest. Maybe they felt like I did. Who could blame them? They had maybe ten feet between themselves and the group when a large mass hurtled forth in the shape of Porter Portman.

"Hey, dingbats," he shouted, "back to the group." He accompanied this imprecation with a rude digital gesture.

Jencks and Watson stood shock still. Slowly Jencks's right hand made a fist and the muscles along his arm tensed. Watson said something and they were caught in an eddy of the passing groups. I moved in.

"I'll murder him," Jencks was muttering. "I'll murder him. Did you hear what he called me?" He caught my eye and raised his voice. "Did you hear what he called me?"

"Yeah, I heard," I said. "Calm down. Look, he's probably trying to make friends."

"Friends? That's how you make friends?"
"Maybe that's the way they do it down South. Hey look, he's a big fat slob and probably doesn't make friends too easy. He's a puppy and you and Watson are big tough German shepards. He bowls you over, but at least he's making contact. That's something. Give him a chance."

Watson added some gossip about earlier Portmanisms, stupidities that I'd missed and something clicked in my head. Porter was important. Keep your eye on him, Wood. I went to change money.

* * *

Trying to do Westminster Abbey after the Tower, St. Paul's, Fleet Street and the Strand was too much for our schedule. Our schedule would take all the strain of a tired jock strap. That piece of paper the dorm organizer had laughed at said mapping session at 5:30 on July 2nd. Well, it was July 2nd but there was no mapping session. By the time the bus had dropped us off it was 5:00 and I'd yet to change money. It was already dinner time after a long hot day. No way. As I changed money I asked each kid if he would voluntarily show up for a chat, at least to introduce the project, around 7:30. Some said no, some said maybe, a few said yes.

At 7:30 only two kids were there: Jencks and Watson. We chatted around waiting for some others. They were down on three people already. Top on their list was Porter Portman. That cry of "dingbat" still rang in their ears. Next came Miss Bloch. She was too strict with her girls and that would never do. Last was an innocent bystander on the bus with us that day by happenstance: Brother Arthur NcPonus. What got them about him was the way he liked everything too much. Leaving the Tower he'd looked back and sighed. "There's seven hundred years of history right in front of you," and almost passed out from sheer excitement.

"Where?" asked Leslie Casyk.

"Why the Tower of London, young lady."

"But where is the Tower of London?" Leslie insisted.

"Why it's right there in front of you."

"No, that's the White Tower and that's the Jewel Tower," said Leslie pointing, "and that's the Queen's Tower. I've got to get a picture of London Tower."
It was a funny story and we chuckled over it but it didn't stop time. Time went on and no one else showed up.

"I guess you're it. If you're the only ones coming, let's forget it."

About sixty seconds after they left Sven Heller appeared. I told him the same story. I was beginning to feel like something the dog dragged in all over again.

It was almost eight o'clock when the nine girls showed up with Miss Bloch. There's one thing about a disciplinarian. If she's on your side, you're in. We went upstairs to the common room and settled into chairs. We chatted about this and that to break the ice. They were a little formal at first, stiff, but they loosened up. They had some gripes and figured I was the person to bring them to. I listened. They were kind of shaken of by the day, its disorder, and failure to keep the schedule. They appreciated the fact that I'd changed the money, but failed to comprehend why my labor was necessary. The food in their dorm was scarcely fit to eat, and so far as I could tell, none of them had done more than push it around on the plate. Miss Bloch was shocked to find boys in their floor, and not tour boys, but natives. One had even invaded the girl's john. The girls also sensed a certain hostility among the other H-T groups. They weren't making friends. They began to get angry as they let off steam and were taking it out on me.

I shuffled fast. "You've really got to understand one thing. Neither Bob nor I have anything, anything at all, to do with the running of this tour. Right now we're passengers, just like you." I wanted to make this clear so I said it seven different ways in a row.
After a while we got around to the project. I did a shu-ba-ba-do into the maps and we zeroed in on those. The girls broke into three camps: pro, con and uncommitted. Leslie Casyk, Vittoria Palazzo and Erica Cruz had the greatest reservations. Leslie was the oldest and the youngest on the tour. She was only fifteen but she'd already seen it all. She was made-up to the eyebrows and smoked and chewed gum like it was going out of style. She took more pictures on the tour of London than I've taken in a lifetime. She was small and had the longest finest hair I've seen on a fifteen year old. She never looked you in the eye when she spoke and made uselessly furtive gestures with her hands. I never knew what she'd do next. After thirty-five days with her, I still don't. And under her carefully manufactured exterior lurked a nice little girl, a little crazy sometimes, but still nice.

Erica Cruz was another story in another book. She was Puerto Rican and looked it and hated it and denied it. She was also a dish, of sorts. Her skin was pale, the color of cream and her hair was black as coal. Huge dark eyes looked at you behind rimless cheaters, and they belonged to that rare sort of person that often cries and laughs at the same time. She was earnest and eager and capable of easy excitement. Simple things pleased Erica, like daisies on her birthday. She was always ready to go anywhere, to do anything. She always would be.

Vittoria Palazzo was somehow a cross between Cruz and Casyk. She was plenty kooky, which put her in both places at once, but she had Erica's large eyes and Leslie's long hair. What struck me about Vittoria was her voice. It could cut Fort Knox in two with a single word, but from Vittoria a single word is as rare as the straight truth from a used car salesman. I didn't know it then, but Vittoria pumps gas in her free time and so back chat comes as naturally to her as melted ice cubes at a cocktail party. And back chat in that voice is a lethal weapon. What these three didn't see about the maps was the rationale and the hassle, which is putting it mildly. Leslie Casyk saw the mapping sessions like she saw the Tower of London — not at all. Vittoria just didn't see why they had to.

"Look," I said, blowing smoke out of the corner of my mouth, "you don't have to. Nobody's going to make you draw maps for us, I'm sitting here asking for your help. That's all. If you don't want to, don't. I'm not sure I would in your position. Here you're spending a lot of money to have a good time seeing Europe and this kook comes along and wants you to do some work. He's crazy. But if you do, I'll love you for it. That's all I can say."
"Mr. Wood, I don't think you're being fair—" Nybia Pagan began.

"My name's Denis."

"Well, Denis, I don't think you're being fair on yourself. I enjoyed the map exercises and the psychological questionnaire. I think we can learn a lot from them. We will be getting something out of it all besides helping you." Her eyes flashed around at the rest of the girls, Nybia Annette Pagan. Another Puerto Rican with pale, pale skin like ginger ale and coal black hair. Lots of it. She had smaller eyes than Erica but a fire danced in them that could be a come-on or sheer intelligence. She was wearing an elegant white nothing with a collar like a ribbon around her throat that emphasized the way she held her head—tall, proud, maybe a little defiant. She calls herself Spanish, anything to avoid being a Puerto Rican in New York. If she said the maps were fun, they were fun, no ifs, ands or buts about it.

But she wasn't even alone. Therese Montaigne agreed, cutting through the whines of Leslie Casyk, the way the Celtics take the ball down court. No fuss, no fight, just pro. Her skin was the color of fine old leather and her black hair was bunched up around her head like a nest cuddling fledgling birds. Her posture was erect but easy and graceful. She handled her body with maturity and spoke with a polished voice pitched lower than you expected. Therese Montaigne, a French name, on a woman of distinctive color. If you figured she was Haitian you were right. The funny thing about her support was that she hadn't filled out a single one of our predeparture forms. Maybe she was just coming to the aid of a cornered animal.

With vocal support for the project countering the negative feelings expressed earlier, a little free for all took place among the girls. Miss Bloch sat back in her chair and watched. So did I. Gradually a positive opinion began to assert itself. Lana Monroe and Marina Giaconda came out for the project. All Erica and Vittoria wanted was convincing and they got it. Pretty soon it was six to one in favor and Casyk gave up the ghost and threw in the towel. Mayo and Baker, silent and uncommitted, muttered vague positive assurances. They'd all draw maps and help in every way. We broke up and went out into the night.

Some of them wanted to go to the GPO Tower and I joined them. We headed in the right direction and started walking. It was pushing darkness but out from under the trees lots of light remained in the sky. The Tower was fun and an essay in orientation. None of them
could find Cartwright Gardens on their own, invariably settling on a
minute circle of green at the Tower's foot. The day's tour was likewise
impossible to plot. We stopped at a Wimpy's afterwards and I watched
them make up for the dinner they hadn't eaten at the dorm. Some tough
young punks threw wisecracks across the counter but the girls back chat
was masterful. The guy behind the counter was a grad student at the
London School of Economics. It was all fun and a little crazy and when
we parted in front of my dorm we parted feeling good on both sides.

*   *   *

You might ask me why I go into such detail about a single day
on the tour.

Because for one thing the charged atmosphere made each
detail stand out, the way things stand out in your mind when you learn
someone close to you has died. Time seems to slow down and give you
time to absorb and memorize each little thing, like what you were
wearing and where you stood when you first heard the news, and the
color of the sunlight on the drapes and the sounds of traffic on the
street outside. This first complete day in London was like that. Maybe
I was holding my own private wake for the project, watching non-coopera-
tion compound inabilities to maintain schedules. Maybe I was mourning
the death of my anticipations and expectations, cleaning out the old
unfounded to make way for the day by day realities of seeing a big hunk
of time and space in under a month. The kids were all on edge too,
maybe for some of the same reasons. Maybe because they were
looking each other over too carefully. Maybe because they were tired
and overstimulated.

Another answer is that I didn't go into detail at all. I
remember that tour block by block, sales pitch by sales pitch, bite
by bite, crowd by crowd. I remember every bill I changed and each
word of the native guide. I remember the liquidity of the sun and the
color of the hairs on my arm as I stood waiting in the Tower for the
group to reappear, watching the fat black ravens, looking at French nuns
in their winged head gear, listening to the voices of the little children.
I remember the softness of the air off the Thames and the sounds of
jack hammers across the river and the feel of the grass beneath my feet.
I remember the sweat, under my arms and in my crotch and between my
toes, that hot sticky feeling of feet doing too much with too little air. I
remember the soggy ham moving toward my mouth on a heavy fork with
one bent tyne and the sound of the coffee pouring into the cup and the
reflection of the ceiling lights in its sinful blackness. I remember the
rough texture of the blankets as I got into bed and the tightness of the
muscles in my upper back and the tears on my cheeks as I thought of home and Ingrid and Homer and wondered what I was doing here a thousand miles from nowhere with a bunch of people who cared for me the way they cared for yesterday's newspaper.

Another answer is that I'm sick of science with no blood, no life, all dry words and dry ideas on dry paper.

Hi. I'm a scientist. I make hypotheses. I collect data. I come to conclusions.

I wear a shiny black tie and a short-sleeved white shirt and when I come to work in my sterile office I hang my baggy jacket on the back of the door and park my emotions in the waste basket with my chewing gum.

No thanks. Not for me.

Not for me the emptiness of "data." What a word that is. What a lot of sweat and anger and frustration hides there. Data. My data are thirty-one kids, all real, all flesh and blood and eyebrows and rich skin and varied voices and emotions and attitudes and vitality and energy. Taylor and Janine and Watson and Nybia and Karl and Joy and Desmond and Lana and all the rest of them. You look at my data and you see long months of hard preparation and one sweaty nightmare wonder of a whirlwind tour through Europe. You look at my data and see Bob and me, tired and strong, on top of the world and beaten, smiling and grim. You look at my data and you see sweat, salty and uncomfortable. You look at my data...

I will show you blood in a handful of data.

Read on, MacDuff.
"London is an inexhaustible place," he mused. "Its variety is infinite. A minute ago we walked in a glare of light, jostled by a multitude. And now look at this little street. It is as dim as a tunnel, and we have got it absolutely to ourselves. Anything might happen in a place like this."

...R. AUSTIN FREEMAN
"The Magic Casket"
I had plenty of time for reflection the next day, especially in the morning. I was sitting in a large auditorium with two hundred and fifty other people. It was a typical lecture hall of the fifties, steeply banked with narrow desks separating the tiers of seats and all done in blond stained wood. At the front of the hall were acres of blackboards, waiting patiently to be covered with miles of chemical formulas. That made the blackboards different from the audience which buzzed impatiently for the lectures to begin and end and release them once again to the wonders of London. Around the podium hung the tour leaders. Every now and then they'd look up and count the audience as though the fate of the world hung on the number of people there. Finally, while the rest dropped back against the walls, one of them stepped before the podium. Hands spread across the blond wood, he looked at the audience expectantly, waiting for silence. Travel-Counselors looked along their rows of kids. If looks could kill, half the kids would have been wiped out. Silence came unwillingly.

"Welcome once again to London," the speaker began. He outlined the nature of the lecture series and stressed the importance of relating the lectures to the panorama of Europe. He then introduced his first lecturer, a dark-haired hawk-faced kid in a Yale blazer. The Yalie strode elegantly to the podium and spread his hands out across the wood, bracing his body. He stared off into a corner of the room as though he was seeing something no one else could see — eternity probably. He held the pose. He opened his mouth and the lecture series began.

He was going to talk about nostalgia. Kids held pens over open notebooks, waiting. He talked. The pens relaxed, after a while they were put away. After a longer while they were picked up again, I craned my neck to see what they were writing. Doodles. I saw girls passing notes. I watched yawns. I yawned. I picked my mind up and let it wander. As I said, I had plenty of time for reflection that morning. Every now and then I would yank my mind back to the lecture. Now he was describing the difference between comedy and tragedy. One was a circle, the other was an uncompleted arc. I thought about arcs. I thought about bridges. I was seeing suspension bridges. Maybe tragedy was a suspension bridge. Quiet like a mouse I slid out of my seat. I backed slowly toward the door. The room was too quiet. The monotonous voice droned on. I left. Outside the world was cool and damp and refreshing. I filled my lungs with air.

Yessir, I thought, that is one relevant lecture for some kids on a tour of Europe. Maybe it will help them see their experience with the tour as an arc, tragedy, unresolved. It sure is no comedy. Nothing I was involved with was ever less funny. I walked around Bloomsbury admiring the wide streets and the quiet squares. In Tavistock Place I
walked through a gaggle of birds feeding on the walk. They couldn't be bothered with getting out of my way. They had no fear of humans at all. I guess I learned more about the English than I could in fifty lectures. Education. I sneered. I made it back to the lecture hall just as the kids were getting out. Relief was written on every face. Even the T-C's looked like you would imagine someone looking who had spent the last three hours in a small paper bag. I fell in with the girls I had been with last night and we walked to lunch together. Had they liked the lectures? What lectures?

"They were okay... I guess," one of them said. They still didn't know if I were a spy or not. Bob joined us. Dismay was written over his face like Coca-Cola is painted on a billboard. During lunch we circulated among the tables, reminding the kids about the mapping session that night. Lunch looked like the usual cafeteria affair. Everyone said they would make it if they could. It was scheduled for 5:30.

The afternoon was free, for us and for the kids. Bob and I wandered down Tottenham Court to Oxford and down into Soho. It was a different city than I'd seen on the tour bus. We looked in a lot of windows. By the time we'd passed through Piccadilly to Trafalgar we were both feeling empty inside. The National Gallery looked like a giant restaurant, St. Martin's in the Fields made me think of church suppers. We entered the first place that really sold food and settled down in padded chairs and pushed our knees beneath real linen. It was an Indian restaurant and I had curry that for once didn't taste like yellow chile.

"This is more like it," I said over the black steaming coffee.

"What do you mean," Bob asked, smoking one of my Passing Clouds.

"Well, when I think of travel, I think of long interesting walks and decent restaurants placed at pleasing intervals and most of all of service. This business where you make your own bed and fight with the hot water faucet and stand in line to eat —- and carry your own tray back and then board a hot bus..." I trailed off to sip my coffee. We luxuriated in the hush and the food-feeling and the soft-footed waiters.

Bob looked at me. "What are we going to do about the project?"

I shrugged. We looked around the room for inspiration. We found none. We paid the bill and left.

At 5:30 we'd been waiting out in front of the dorms for the kids to come back for half an hour. It was pleasant. The afternoon sun was
warm but not hot and hit us dappled by the trees in Cartwright Gardens. From the tennis court came the sounds of tennis balls going thonk-thonk. By 6:00 it was replay time. None of the kids had materialized and when they did it would mean eating, washing, changing and off to the theater for an organized night-life experience. Then the kids came in floods.

    Sorry we're late but it's too late now. Got to eat. Got to shower. Got to change. Got to go see some play.

    That's okay. We'll catch you another time. I looked at the schedule and crossed off the fourth missed meeting. That left two scheduled meetings to go. What a wonderful project. We'll get maps of the kids as they experience London, on the first day, on the third day, on the last day. Sure, in a pig's ear. We hung around the dorms as the kids gathered to leave for the show. We chatted. Susan Lincoln and Rhoda Noyes got lost that afternoon and had ended up at the police station before getting home. Boy, would I like a map from them! A couple of girls complained about not being able to mail their postcards. We took them to mail. Had we anything else to do?

    After they'd gone we strolled to St. Pancras Station to mail the cards. It was cool in the station, and dim. It was also big enough to dock the Queen Mary and the Queen Elizabeth and have room left over for a brace of aircraft carriers. It was the kind of building that you enter and your insides expand to fill the space. It was a building for big ideas and free ideas. We bought a bag of purple plums and sat down on a scarred luggage cart. I didn't think it would mind. We read the postcards while we ate the plums. We talked about them and after a while I got up and looked at the tracks. They used only four bolts to connect track sections. We used six. I figured it was the narrower gauge that allowed it. I couldn't see any creepers at all. It looked like a well maintained section of track. It was probably fun to work on, a lot more fun than being a social scientist. I returned to the luggage cart and started copying down the postcards.

    "That's unethical," Bob said.

    "I know."

    "Then what are you doing?"

    "I'm copying the postcards."

    "But that's unethical."
"Yeah," I said, "and it's also the only — data we've got so far. Unethical, unsmeethical."

"But you can't use it."

"I know."

The post cards were nice. Three of them were in a hand that used little circles to dot the i's, something girls pick up in the seventh or eighth grade and never lose. I never saw a boy dot his i's that way. We has seven cards. Four of them were of the Tower, one was of the Abbey we never entered, one was of Piccadilly at night, one was one of those cards with seven or eight tiny pictures on it. The cards mentioned the Tower four times, the Changing of the Guard four times, shops twice and the Abbey once. Data. What did it mean?

Hi! Having a wonderful time. Sorry I didn't get a chance to say good-bye. London is beautiful. It's just like Rome (the boys are gorgeous) in many ways. Will tell you about my trip when I get home.

Love,

Hi! Having a wonderful time. Sorry I didn't get a chance to say good-bye. London is beautiful. It's just like home in many ways. Will tell you about my trip when I get home.

Love,

I still can't believe I'm here! It's really something else. Yesterday I saw the Changing of the Guards, Tower of London, and Westminster Abbey. They're really great.

Love,
Hi! It's really exciting here and fast. We rode the subway which was a lot of fun. We went sight-seeing all day yesterday and saw the Changing of the Guards. See you.

Love,

As I sat there in the dim writing out those cards a cold hand crept up my back and for a moment I saw just exactly what those cards meant. They meant that we were on the original magical mystery tour. The kids were in Europe to see what they were supposed to see and they were supposed to see everything they had already seen a thousand times. In magazines. In brochures. On TV. You cross an ocean and go to London to see the Changing of the Guards and the Tower and the Abbey. You take pictures to prove you were there, to convince yourself that you were there. You write postcards home saying you were there. Everybody's happy and you're cultured.

In Sam Johnson's day, "A man who has not been in Italy, is always conscious of an inferiority." In our day, it's the same if you have never been to Europe. At any cocktail party you can say:

"The guide told us that if we took our jeep on the road that night the Indians would have our blood..."

"Uh-huh. Well, what's new?"

"Two months later we became the first white men to be initiated into the tribe and to photograph that strange ritual..."

"Is that (yawn) a fact?" (Snore.)

"And then in July I went to Europe..."

"WHAT!! YOU WENT TO EUROPE. WHY DIDN'T YOU SAY SO. IS IT TRUE THAT THERE ARE SO MANY PEOPLE AT THE CHANGING OF THE GUARDS THAT YOU CAN'T SEE ANYTHING? DID YOU SEE THE BLOODSTAINS AT THE COLESIUM? DID YOU EAT THAT ICE-CREAM IN THE PIAZZA NUVONNA?"

With all due apologies to Richard Bissell, it's true. Nobody wants to hear about experiences with the Zinacatan Indians, they just want
to talk about THAT trip down the Seine or the crowd at Speaker's Corner.

Sitting there with those postcards I began to feel slightly sick. Who knows? Maybe it was the plums, but those postcards didn't help things any. We bought the stamps from a machine, dropped them in the box and left. We walked down Euston to Portland Place and so down Regent Street to Piccadilly.

Regent Street. John Nash. One great architectural monument. The famous crescent at the top of Portland Place was a bunch of old buildings with cracked plaster and chipped paint. Through the fan-lights I could see bare bulbs hanging. In the gutters the afternoon papers and the empty paper yogurt cartons stirred uneasily. Shabby people passed us on the street and they looked old and mean and very tired. Portland Place was a wide street like any other wide ugly street. It would make a good place for a murder. All Soul's Church was a cement wedding cake with an oil can on top. It articulated the curve into Regent Street with all the power of the Civil War cannon on the Worcester Commons. Architecture, phooey! You're not human tonight, Wood.

We crossed Oxford Street at the Circus. Why a Circus? It's like every street-crossing in Worcester is a Square. The store windows along Regent were a blaze of lights. One sold china, the next cut-rate clothes, the next trusses. You could tell we were approaching Piccadilly. The curve in Regent Street was something that impressed me greatly, but not as much as the dirt on the sidewalk. We turned into Piccadilly. It was lighted up and about as gaudy as a streetwalker dressed for a night on the town. The fountain was surrounded by the dregs of the international poor set and was as inviting as a stale doughnut. On Piccadilly Road we had that once-in-a-lifetime opportunity to be appraised by uniformed doormen, those buck-fifty an hour guys whose glance starts at your shoes and moves up your body mentally totaling the value of your clothes. If it doesn't add up to at least three hundred bucks you can try another door and get the same treatment. We turned up Berkeley and looked at the used cars in the show rooms. The Queen Mother's old Daimler could be had, if you had a barn to park it in. Over on Bond Street the tourists were parking themselves in expensive coffee houses whose tables spilled out onto the street. We picked one that tried to pretend it opened in 1920. The rickety tables could just stand up. Ray Noble played on the jukebox. We sat on the street and drank fifty cent cups of coffee. You're not human tonight, Wood.

So? Give me three reasons why I should be. I broke my back getting ready for this trip. My academic future lies in the gutter. My wife is in another world. All I had so far were seven postcards that made me feel like a thief reading them. Why should I be human?
"It's not that bad, Denis," Bob said.

"It's worse. If we don't get any maps tomorrow, I'm going home."

"I don't get you. You're here in Europe. All paid for. Enjoy the trip at least."

"I didn't come here to see Europe," I wailed. "I came here to get my Ph.D. I'm not getting it so far. Let me out, that's all. Let me go back where I belong." I put my cup down with a bang, spilling coffee on the table. A couple of hot shots looked disapprovingly from another table. I looked right back.

The trouble was, Bob really agreed with me. He asked me for a cigarette. I was smoking #999's now. We puffed away on the cigarettes, trying to make an oval fit where a circle usually does. Bob looked up sharply. "We'll get a map set tomorrow," he said.

"How? It's a free day. The kids'll never be together. Half of them are going on a trip to Greenwich. Some others are going to Windsor. Who knows what the rest are doing?"

"That's just it," Bob said. "We've been trying to do them as a group. Let's forget the schedule. We know it doesn't work. Let's stop trying to do them all at once. We know that doesn't work. Let's take them on one at a time whenever they have time." He stubbed out the cigarette.

I lit another one and looked the idea over. It looked beautiful. It looked too beautiful to be true, but it was the best thing I'd heard in days. "Okay. It sounds good. What do we do? We go and sit in the lounge and wait for them to come. We should bracket dinner pretty widely on both sides, say from 4:00 to 8:00. As they come in, we tell them what to do, they do it and go. Others come in. It looks good."

"We can't lose anything," Bob added.

"We've got to let them know, though. I'll put it up on both bulletins first thing tomorrow morning and tell everyone I see. We also ought to tell each T-C if we get the chance. Let's go home."

We paid for our coffee. If the thing panned out, the coffee would be cheap. If it didn't, it was just another gyp. One more in that long line wouldn't matter.
I was up early the next morning posting my notices and talking to people. Nobody screamed with joy, but I hardly thought they would. As soon as I could I put a call through to my wife in Worcester. I still couldn't shake my underlying gloom. The call didn't help things any. Getting the States was no problem at all, but getting the English operator was a whole other story. More than anything I have ever run across I hate foreign phones. I spoke with Ingrid longer than we could afford too, but it was part of the game. I told her to expect me any time, that I could well be on my way home that very next day. She told me about the Fourth of July in Worcester, the Puerto Ricans playing guitars in the streets, the big bon-fire up on Castle Hill. She told me about Homer. She told me she was lonely. I hung up with my ears ringing. Those phone ads are a phoney, the ones that say "GO HOME THIS WEEKEND — BY PHONE." You call and you talk and you still aren't home. Those long conversations just make the distance greater than ever.

We had coffee around noon at an Italian place around the corner from the dorm. Bob tossed some Italian at them and they tossed it right back. It was some comfort to know that he really did speak all those languages. It was also nauseating because I couldn't. We went back to my room and wrote up all the stuff about the kids that we knew so far. Sometimes we knew something, but sometimes we didn't. We went through the list of names systematically filling out a sheet for each name. On this sheet we'd record what we knew so far. We didn't know very much about anybody really, but we did our best. Here's what we had for Joy Gray:

Very sophisticated. Wore boots and pants on first day's tour and was photographed outside Buckingham Palace by the Daily Mail because she was well dressed. Very smartly got up. Bob says she's a career girl but I say out for a man, but a very classy man. She's a bit of a dish, says Bob. Brown hair, he adds. Also freckles, but I think not. Heavy in thighs, he notes. Very aloof, cool, clean. She's alluring in a Dolores del Rio manner. Horsey. Took copious notes on tour of London. Looks askance at our project. Intimidates Bob. I think she can be put in her place. Not sweet like Nybia.

But for Candy Fisher we could only write:
No face for Fisher for either Bob or me.
Small, thin, blond, quiet at back of bus.
A grey sheep.

Of course Candy Fisher was nothing like that at all, not even blond, but it was the best we could do. We began to laugh at our ignorance. Every time we would get a grey sheep we would laugh uproariously. I listened to the laughter and didn't like it. It was hysterical. It sounded like we were going mad. I didn't like that. Do another name.

Taylor Nash. Greek type with brownish, very curly hair. Wears casual beachboy shirts. Strikes me as strong silent type. Bob knows nothing of Taylor at this point, says he has long hair. Taylor is not keen on mapping and says so outright. Taylor was one of the first people I met in the airport and his negativism toward the project was chilling. Taylor is like Joy Gray. I like Taylor. (Was very hostile about taking bags off the truck.)

William Brown. Small, Skinny, T-shirts, young looking and yet not like those thirteen-year-olds. Quiet, bright, immature. Bob will check to see if he's with Jane. (So what?) Seems to have a camera. Blue eyes.

Jane Brown. Small, blond, slight, gray pale person. But I talked to her at some length and still I ask: who is Jane?

Another one of those. Pow. We'd be rolling on the floor in paroxysms of laughter. What fools we were. It was some way of releasing in ourselves the tension that had been built up so far by frustration after frustration. The afternoon sun left my side of the building and the room turned gray. We looked at the clock. It was 3:30. Time to get ready. Bob went to his room to change while I collected the things we'd need for the mapping session: box of pencils, already sharpened, set of map blanks, set of tracing paper, set of Environmental A's, set of nerves, book to read just in case. What I needed was a job, my wife, a Ph.D. and home. What I had was a box of pencils and a lot of paper. I looked the room over, snapped off the light and left closing the door very gently behind me.
The big Commons Room on the second floor of the dorm was bathed in sunlight. It was a long room. One wall was practically all glass. In front of the windows hung luxurious drapes, some pulled back, but others negligently screening the afternoon sun. Through the windows you could see Cartwright Gardens and hear the tennis balls going thonk-thonk. A lot of chairs were pulled up to the window and in them lounged students, some with the Sunday paper piled around them, others just quietly staring. Scattered around the length of the room were other chairs, deep, comfortable looking chairs, gathered into small groups around tables. A light green carpet covered the floor. It was a very nice room, the sort of room you imagine in an English men's club. It was hushed and warm. It was a room in which work was never done. It was made for relaxing.

We made a small nest out of a table and a few chairs. I laid out my materials neatly on the table. We sat and waited. It was 4:00.

At 4:10 the first kid appeared. The door opened cautiously at the far end of the room and in he came. He had to walk the entire length of the room to reach us. Halfway he came between us and the sun. It gave him an aureole all his own. It was well deserved. He was an angel to us. The door had scarcely stopped swinging when it opened again and three of the girls entered. They too created their own aureole. The room filled with angels and it was heavenly. Bob and I spoke softly and handed out the materials. The kids scattered to various seats and went to work. It was like that for nearly two hours. There were never so many kids that we couldn't answer questions and keep our eyes on the mapping progress, and sometimes for a few minutes there would be none at all. The maps grew in a wonderful pile beneath my elbow. It was the most wonderful room in the whole world that afternoon. As it rolled on to 6:00 nearly half the kids had shown up.

Bob and I were to spell each other for dinner. At 6:00 I would go eat and at 6:30 Bob would. I patted my pile of maps as I stood up and looked around. Over by the windows two girls were bent over their tracing paper overlays. Another was sitting off in a corner by herself. She was staring at that sheet of paper as though at a rattlesnake. I opened the door and passed out into the hallway.

Heading toward the cafeteria I ran into Taylor Nash. True to form he was wearing a beachboy shirt. He nodded at me and said:

"How's it going?"

I looked at him. A slight smile played at the corners of his mouth. "It all depends," I said.
"On what?" he asked.

"Do you want to draw maps for us?"

"I don't want to," he said, "but I will."

* * *

July 5th was a Monday and a big day for the tour. It was the day of the first field trip. We were all going to Stratford-on-Avon with a stop at Oxford. I was up bright and early. I felt fine and didn't care who knew it. I even got hot water out of the tap without breaking my wrist. I even changed my shirt. Before I left the room I glanced lovingly at the folder filled with maps. I had qualms. What if somebody stole it? Wood, for Christ's sake, nobody's going to steal a bunch of old maps. Yeah, I know, but if they do? One half of me was disgusted with the other. Where's your love of humanity? Right here in this map folder, I answered. I picked up the folder and placed it in my suitcase under dirty clothes. I looked around one more time and left. Over my shoulder was my sisal fiber book bag and it was filled with bus seating charts and Stereomatrices and a box of sharpened pencils.

The breakfast room was quiet, too quiet. I sat down with the Indiana contingent to eat. They looked slightly subdued, as though the night before had lasted longer than it should have. I said nothing, but somehow I felt oddly left out. The conversation dragged. They looked exhausted. Bob came down and joined us just as the kids were leaving. It was an eight o'clock departure and not much time remained.

Bob smoked one of my cigarettes over his coffee. He looked fine.

"Do you have everything?" he asked.

I said I did. "What's wrong with the kids this morning?"

"Anything?"

"Yeah. They looked washed out."

"Probably just too early in the morning." He yawned.

I grunted and downed my last bit of coffee. We smoked in silence, and then went up to the buses. It was a huge bus waiting for us. It wasn't as long as the Thames but it held forty-nine people, which was ten more than our group. So we had some of another group with us. We
Figure 8.0. Bus seating chart, 8:30 a.m., 5 July, on the road to Oxford. This chart does not reflect the size of the bus utilized on this trip, and consequently a row of seats has been omitted. This row was immediately behind that of Wood and Beck and was completely filled with "X's", representing the kids from other groups. Unoccupied seats are blank.
got on the bus among the last and found an empty pair of seats near the back. The bus started and we were off.

We looked around. Group L was sitting together and the kids from the other group were sitting together. We got out our charts and went to work. It was getting to be easy. But something had happened. This chart didn't look like the chart we'd taken on the London tour. Wow. I whistled silently between my teeth and pointed it out to Bob. Marina Giaconda was sitting with Robert Watson and Lana Monroe was sitting with Desmond Jencks. True, Bobbi Seward was sitting with William Brown, but that was different. They weren't talking. But Marina and Watson and Lana and Desmond looked like pairs.

Another thing was interesting. Sitting at the very back of the bus where the aisle ends and there are five seats across — from my point of view the very worst seats on any bus — were four Group L kids. What was interesting was that they were separated from the rest of the group by outsiders. Did they want to sit in those seats? Laura Johnson, Tracy Cummings, David Abrams and Karl Prinz. Data. What did it mean? I had no idea. Since thinking about it was getting me nowhere fast, I yanked my mind loose and turned it out the window.

The English countryside was moving by. At first it was flat, as flat as a flat bicycle tire, but then hills started poking their heads up here and there. The country became rolling with long straight stretches that the road rose and fell over easily as though it didn't want to bother our stomachs. And then they were real hills. We crested one of the long straight and made a sharp turn and the country fell away from us in sweeps of green covered with sheep. Some of the kids were sleeping and others were playing cards, but as we made that turn the bus emitted a sigh and cameras snapped and the sleepers stirred. Timed to the second the courier picked up his microphone and started talking. Somehow the passing scene made no impression on him for he was telling us about the history of Oxford and then we were in Oxford driving down a main street that could have been in Iowa except for the obvious age of the buildings, and that's something we fake fairly well these days anyhow. The bus stopped and let us off.

We stood in front of an ancient archway. Through the archway filed two-hundred and fifty kids. The quadrangle inside would have been serene except that our tour put a stop to that. One of the couriers started talking, explaining the difference between the American and British university systems. After a while he stopped and explained that we had half an hour to see the town. We wandered off in small groups. I got separated from my group by a bookstore. When I came out I ran into Miss Bloch and Therese Montaigne. We chatted pleasantly on the corner
until Miss Bloch said:

"We're going to take a look at Magdelen. Will you join us?"

"Certainly," I said. "Any particular reason?"

"Well, do you read Dorothy Sayers?" We hurried across a crowded street.

"Of course," and I snapped my fingers. "Gaudy Night."

"Oh, you do!" A smile crossed her face. "Then you know why I want to see the college. I promised myself that I would try to see where Harriet taught." She paused, thinking. "I think Gaudy Night is the finest of the series."

"Well," I said, "I think it's a fine book, but The Nine Tailors is my favorite." Therese Montaigne wanted to know what we were talking about so we explained the great romance of Wimsey and Vane as we ploughed up the street. By the time we reached the college we had six minutes to get back to the bus. We tossed a glance at the walls, figured which was the gate that was used after hours, and returned to the bus talking about Wimsey the whole way.

Miss Bloch and I probably had nothing else in common, but that alone could have let us prowl Oxford in contentment together for an afternoon at least. It was too bad we had only six minutes, but it summed up the nature of this tour completely:

"Okay kids, this is the world. You've got six minutes to catch it." Six minutes is a long time. You can get married in six minutes. You can register for kindergarten in six minutes. You can lose a job in six minutes. You can even make it back to the bus in six minutes. Six minutes, phooey.

Forty-five minutes later we were eating lunch. It was the usual cafeteria fare, beverages extra. It was a meal you had to work to keep down. I ate with Ann Hendricks. Ann was a frail girl, a girl so silent you might think she was dumb. But she could talk and we did. Her love in life was music, and home, but Europe was marvelous. Sort of. While I wolfed my food down, I watched her push it around on her plate. She didn't like this, she didn't like that. As far as I could tell, she didn't like food at all. Maybe that's why she was so skinny. But she had a smile that could make a doorman lose his cool. She was pleasant to be with when
Forty-five minutes later we were looking at a tombstone. In life there is no thrill for spine-tingling excitement to compare with looking at a tombstone, even if it's got Winston Churchill's name on it. It was small and gray and long blades of grass tickled its edges. The small plot was surrounded by wild roses. If you looked up the silhouette of Bladon was there, breaking up the horizon. I stood there a long time with David Abrams and Taylor Nash after the rest had gone. Then we hurried through the village streets to catch up with the rest of the group.

It was one of those villages that lets you know life is worth living. The houses snuggled into the ground comfortably and surrounded themselves with riots of flowers. The hollyhocks whispered to each other in the aurous sunlight. We were impressed. Taylor talked about the pleasures of living in a place like this. We caught up with the rest of the group and the spell was broken.

It was all very pleasant except that forty-five minutes later we were in Avon standing in a line a mile long to get a chance to walk through Ann Hathaway's cottage. You didn't move fast, you didn't move slow. You just moved. Back on the bus. Shakespeare's birthplace. An hour's free time. I took a picture with Erica's camera of Erica and Nybia and then I took one of them with Nybia's camera. Back on the bus. Out to some schlocky restaurant on the edge of town. Back on the bus. To the theater. We had balcony seats. I got to read the piece in the Daily Mail about Joy Gray. It said she had a good body but did all the wrong things with it. I'd have been pleased just to find myself in the center spread of the Daily Mail. Joy was furious. We had comfortable seats if you go for hard wood benches with straight backs in a steam bath. I slept through the first half of the play and discovered during intermission that I wasn't alone. I dozed through the second half.

Outside evening had come slowly. Lanterns hung in the branches of the trees around the theater and their reflections in the water danced and shimmered. A huge moon hung in the sky. Daylight flickered at the edge of the world. As you like it. This beat the play six ways to paradise. But there was no time to see all this, for it was back to the bus and home to London. For the first part of the return I sat with Bill Brown. But that's all I did was sit. Either he wanted to sleep or we had nothing to talk about. When I found myself apologizing for smoking, I figured I'd better find another seat. I sat with Jill Needham and talked about the project and the tour. Miss Bloch turned around in her seat and made it a threesome. We talked quietly. In the back of the bus people slept and did other things, quietly. We were all alone in the world, hurrying through narrow streets and small villages. The headlights of the
bus would rake a closed pub coming into a curve.

That day, we somehow had become a group.

* * *

The next two days passed quickly. The morning following the field trip made history: a scheduled map session came off. Each group was to spend an hour or two that morning working on the special London project. This was to take a hunk of As You Like It and transmogrify it into something relevant to the twentieth century. I guess you could even deal with it as a circle if you'd stayed awake for the first lecture. Group L did their second London map instead. They were excused from all special projects because they had one all their own. Bob went to the Group K session to collect a set of maps from kids who hadn't been introduced to the point-line-area business. Everyone was willing and cheerful.

I spent that afternoon and evening with Hugh Prince, a geography professor from the University of London. He'd spent the previous semester with Clark and I'd taken him on a long walk through Worcester. Now he took me on a long walk through London. Hugh Prince is the archetypal Englishman. He wore a dark suit and carried a tightly furled umbrella. When we found Covent Garden closed he hammered on the door with his umbrella and argued with a caretaker about the rights of Englishmen on public property. He took me to see the Temple and we found the crack between two buildings that is 5A King's Bench Walk where Dr. John Evelyn Thorndyke, M.D., still lives in our imaginations. The greensward where Thorndyke and Jervis would walk on an evening arm in arm was paved and filled with cars. I don't think Thorndyke would like that. We took the train to Hugh's home and shattered another cherished illusion: maybe Holmes and Thorndyke and French were just used to it, but I never sweated as I did on that train. On the wall in front of Hugh's home a fat black bird let me touch it. English animals.

We looked at the garden in the back of the house. A long oblong of immaculate grass was boardered with an incredible display of flowers. It was as though I had entered a Medieval tapastry and found that it wasn't a dream, but the real McCoy. Hugh apologized for the condition of the garden. I looked around to see what was wrong. I saw nothing.

"What are you talking about?" I finally asked.

Hugh moved the toe of his perfectly polished shoe through the grass. "It's too long."
He took me over to a wall of roses. The smell of them was strong enough to build dreams on and the range of reds was infinite. He poked at them. "Too tangled."

I laughed in amazement. I met his wife and two kids. They reminded me of the garden except that Hugh didn't apologize for them. We had a dinner that was a dinner worth eating and sat around afterwards talking. I probably talked too long and too much about myself, but I felt sort of like I had just returned to civilization after two months alone at the North Pole. I missed the last train in and slept the night.

Before we parted the next morning Hugh showed me Jeremy Bentham. In a corridor in University College stands a wooden box about six feet tall. It's kept locked, but Hugh had a guard unlock it. In the box sits Jeremy Bentham dressed in his best suit of clothes. Jeremy Bentham has been dead a hundred and forty years. In a separate box standing over a doorway is his pickled head. Hugh says that the head sits at the head of the table at certain meetings of some board of the College. He may have been pulling my leg, but I believed him. I understood the phrase: "Mad dogs and Englishmen..."

I left Hugh and crossed the street to the auditorium where the tour was gathered for the presentation of the group projects. It was a different bunch of people than had been gathered there for the first selection of lectures. They were more comfortable and the chatter died down even less willingly. The groups began their presentation. There was a recital of lines from the play. Very dull. There was a skit spoofing the tour along the lines of the play. Funny but high school. There was a mad presentation utilizing tapes and a chorus that chanted something or other interminably. It was fascinating but strange. The tour leaders put on frowns and looked like they were suffering from burst apendices. During the break Cliff Jaeckel passed a Punch back to me. Indiana had been laughing over it for the last fifteen minutes. It was a punch at the Common Market countries, the ones we'd be visiting. It was as funny as Bob Hope in a Las Vegas lounge.

Two more groups presented. It was coming time for the leader to say that Group L was excused from participation. Des Jencks looked back at me. Pain was on his face, pain from having nothing to put on, pain of not taking part. It was all my fault. I shrugged my shoulders. Des started whispering with his neighbors and then went out into the aisle, squatting to talk with the rest of the group. I felt my stomach muscles tighten and sweat on my brow.

The London dorm organizer stood up as the applause for the last presentation died down. "Group L," he began, "has the option—"
Des Jencks stood up and shouted, "We take it!" His voice filled the auditorium. He walked quickly to the stage followed by most of Group L. There was a hurried consultation lasting about a minute. My pulse was racing.

The group turned to the patient blackboards and picked up pieces of colored chalk. Some started putting points down. These were followed by kids connecting them with lines. Other kids covered this skeleton with areas. I let out a deep eternal sigh. They were mapping. I didn't even see what else they did. My eyes were covered with an aqueous film of grey. Maybe it was tears. It was one of those moments that lasts a lifetime and then ends too suddenly. The group was returning up the aisle, faces flushed, smiling.

The skit came in third in a field of six, but for me they came in first in a field of one. No other group was in the game.

*   *   *

Later on in the trip Omar Lenz was to compare life to the road we were on. The road would wind along the edge of a hill all sunny and then dive into a dark tunnel. Omar said that such was life, good and filled with light and then bad and suffused with darkness. The last day in London was like that. The morning with the skit was good and vital. Later on we passed through a tunnel.

It came in the form of a conflict of interests. That day the head honcho for the entire tour in Europe arrived in London. He was a hatchet-faced European with just enough of that European charm to make you wonder if his ugliness wasn't really something else — rugged handsomeness, for instance. He just didn't have quite enough charm and in the end you knew he was ugly. He also had that sallow dissipated look that comes, not from degeneracy, but from living too long in too many hotels. He spoke with an accent but his command of English was perfect for his needs, as was his command of Italian and French. He was a master courier from endless experience and knew Europe the way a mailman gets to know his route. He knew it road for road and bump for bump. He liked me, probably too well, and had been the one who had set up our aborted schedule. He set up every schedule and knew how to keep them and expected others to do likewise. Let's call him Odin, not because that was his name, but because like Odin, he saw well through one eye only. He had set up a 3:00 courier meeting for that afternoon and since I was to become a courier later, I was expected to attend. Both Bob and I showed up just before 3:00 to find only two people in the room, the unit director, and Odin, tapping his fingers impatiently on the table.
"Robert! Denis! How very good to see you," He stood up with a smile of pleasure on his face and outstretched hands. His accent turned Denis into Daynise and Robert into Rhhoberrt. It was good to see him and we shook hands all around.

"How is the project coming? Everything is going well?"
Everything was going well and we told him so. It seemed pointless to bring up the questions of non-cooperation and schedule abortion. We chatted amicably for half an hour. Every now and then Odin and I would check our watches. He was waiting for the others to show up and I was making sure we didn't miss our last mapping session.

At twenty of four, I stood up. "I'm sorry we can't wait any longer, Odin, but we have a mapping session at 4:00."

He looked at me sharply and then rummaged in his briefcase for a copy of our schedule. All of a sudden I felt very weary.

"But I don't understand what is going on. On the schedule you are not having a session since yesterday."

He put a very concerned look on his face. He may have even been concerned. Something had happened to his precious schedule. Both Bob and I began explaining. I was somehow for placation. Maybe I should stay for the meeting and Bob could run the session. I felt like I was stabbing Bob when I suggested it. Bob looked daggers at me, and I knew he was right. Give an inch and you've lost the game in this arena. Some of the late couriers dribbled into the room, and Odin moved our conference out into the hallway. It was futile. He didn't believe us. Of course the London staff had cooperated! Hadn't he told them too? Bob stayed behind to explain some more and I went off to the Commons Room to collect maps.

The kids came and drew their maps and everything was fine except that I felt sick inside, sick like I hadn't been since we got our first map. Sicker, because that first map was preceded by frustrations. This blow came from euphoria. Bob appeared looking like an old mail sack someone found in a mud puddle.

"It's okay," he whispered to me as Janine Eber handed in her map. But his eyes told another story. If it had been okay, relaxation would have shown there. All there was in Bob's eyes was determination. Grim determination. Something resolved but far from okay.

The success of the map session calmed us both. Twenty-nine kids drew maps that evening, some their second, some their third and a few their fourth. We took the maps with us to dinner. They were
marvelous. Group L knew how to map. Why should Odin upset us?

We both had the answer to that. He was going to be our courier for the next six and a half days. Whew. By the time dinner was over we felt fine. A cigarette or two over good coffee can work wonders. London was over. Everything would be better in Europe. I tried to believe that. As we left the restaurant, I think I did.

I went to my room to pack away the project. The first thing I put away were the predeparture mailings that had been given to us in London. We'd collected three sets of hometown maps, predictive morphologies of London, and ideal cities. Seventeen kids had given us the second part of the psychological questionnaire, and nine had handed in their predeparture stereotypes. It made a biggish bulge in the data case. I patted them lovingly as I put them away.

Next I put away the stereotypes we'd collected in London. Twenty-two kids had completed them, two had handed in uncompleted sets, one had completed only one variable, and one, Agatha Jones, had started it but refused to finish. It wasn't a matter of disinterest on her part, but as close as I could make it, a matter of principle, something to do with God. I sighed as I put them into the data case.

I put away the Adjective Checklists. These also had a series of questions on the back. Every single kid had filled them out and five of the T-C's had joined them. I caressed the folder lovingly and added it to the data case.

I picked up the Group K folder. This was the control set that Bob had administered two days earlier. Each map had a series of questions on the back, the same questions we'd asked Group L on the Checklists. There were forty-three Group K maps. I smiled as I slipped them into the case.

There was one pile left on the table: Group L's London maps. I picked the pile up and riffled the sheets of paper. I divided them into four folders. In the first folder I placed the first maps the kids had drawn. There were thirty-one of these. Five T-C's had joined them. Thirty-six first maps of London. In the second folder I placed the second set. There were twenty-six of these. In the third folder I placed the third set of maps: nineteen. There were only four maps in the fourth set. They were drawn by Des Jencks, Leslie Casyk, Marina Giaconda and Robert Watson. Bob and I called these kids "the faithful." I put them into the fourth folder gently, as though they would disappear if I breathed too hard. Eighty-five London maps. I snapped a giant band around the four folders. I weighed them in my hands. The maps were doubly
precious now. They were my future. And they were the kids.

I stood there with them in my hands smiling faintly, remembering London. My smile froze on my face until it hurt. I stopped smiling. I looked at the folders in my hands, lowered my head and gave them a quick kiss. Then I looked around sharply to make sure no one had seen me do a thing so crazy.

I slipped them into my case and snapped the locks.

* * *

Out in the hallway it was in the air. We were leaving. The doors to the boys' bedrooms were open and there was coming and going.

In Robert Watson's room clothes were spread all over the place. His wig was on the dresser. Yeah, he wore a wig. Some barber had ruined his own hair and he had bought a wig.

"All packed?" he asked me.

"Yep," I said.

Des Jencks bustled in. We talked. Cliff Jaeckel joined us. He was smiling and full of something good. I said something about all the clothes. Cliff faked astonishment.

"If you want to see clothes, you've got to see what Taylor's got." We all went down to Taylor's room. Yeah, he had clothes all right. He was one of the few kids that smoked and he had cartons of Kools with him. He also had anything else you'd need for a year's trip around the world. Had he pulled out a set of tails and a white tie I wouldn't have turned a hair.

Across the hall David Abrams was packing.

Everyone was packing. I went down the hall to my room and climbed out of my clothes. I looked for my pajamas and swore softly. I'd already packed them. I turned off the light and opened the curtains and climbed between the sheets. Street lights shining through trees made patterns on my wall. I watched them.

The air was soft and slightly chilly. Somewhere down the hall someone turned up a transistor radio. The sounds carried on the night air to my room. It had made it in England. I listened closely:
And it's too late, baby. Now, it's too late,
Though we really did try to make it.
Something inside has died, and I can't hide
And I just can't fake it.
No, no, no, no, no, no.

It's too late, baby;
It's too late now, darling;
It's too late.
With Wolfe next to the window, I had to stretch my neck for my first look at Europe, but it was a nice sunny day and I kept a map open on my knee, and it was very interesting, after crossing the Strait of Dover, to look toward Brussels on the left and Paris on the right, and Zurich on the left and Geneva on the right, and Milan on the left and Genoa on the right. I recognized the Alps without any trouble, and I actually saw Bern. Unfortunately I missed looking toward Florence. Passing over the Apennines a little to the north, we hit an air pocket and dropped a mile or so before we caught again, which is never much fun, and some of the passengers made noises. Wolfe didn't. He merely shut his eyes and set his jaw. When we had leveled off I thought it only civil to remark, "That wasn't so bad. That time I flew to the Coast, going over the Rockies we—"

"Shut up," he growled.

So I missed looking toward Florence.

...REX STOUT
The Black Mountain
Departure from London was uneventful. We were all sitting in our seats in our nice English bus at least ten minutes before time. We were scheduled to leave at 8:30 and with Odin in charge, we guessed we'd better be ready on time. We were.

We were still ready at 9:00. The greenhouse effect was taking charge of the bus interior and bread was rising in every seat. So were tempers. I was on my sixth cigarette of the trip and we hadn't moved. It was obviously a replay of the London tour.

"My head is killing me," Bob said.

"Have you taken any aspirin?" I asked.

"No, but I think I will." We asked around if anyone had aspirin but it was all packed in the luggage carrier beneath the bus.

"Is it really bad?"

"Yeah. It is. I think I'll pop into the dorm and get a couple."

"Okay, but hurry."

"I'll be two minutes. Don't leave without me." A joke. I smiled. Bob got out of his seat and left the bus. I saw him enter the dorms. Just then Odin boarded the bus. He clicked the microphone off and on, stowed his cigarettes on the dashboard, and turned to count the group.

"Someone is not coming with us?" he asked the bus. Many people volunteered that Bob had just left. Odin came back to where I was sitting. He had suitcases under his eyes that were big enough for a year's dirty laundry. His face was bathed in sweat.

"Where is Rhobert, Daynise?" No good-morning-how-are-you, just where.

He got a headache sitting in this Turkish bath. He'll be back in a couple of minutes."

Odin turned his back on me, but muttered loud enough: "The bus will wait exactly 120 seconds." I got out my watch and timed him. He waited a little longer than that—say five seconds. The driver let the clutch out and we pulled away from the curb. A chorus of cries went up from the kids;
"What about Dr. Beck? He's not on the bus!" Odin was busy talking to the driver. He couldn't hear a thing. He wouldn't have heard if we'd all shouted in his face. He was tough and was letting us know it.

He might as well have sapped me for all the thinking I could do. I focused on the webbing of the seat in front of me. Faces turned toward me. They were all Odin's. I saw a fist-fight. I saw my fist in Odin's face. I saw an airplane. I saw Ingrid. I saw the bus turning into Tavistock. What was happening? The cigarette in my hand burned my fingers. I jerked my hand and the cigarette dropped to the floor. Ashes sparkled in the dust.

The bus was turning in Woburn Place. A cry went up from the kids. I stood and turned in my seat craning my head to see what they saw.

Running down the street was Dr. Robert J. Beck, B.A., M.A., Ph.D. His arms were in the air waving. I looked up front. The light changed and the bus was caught in the intersection unable to move. Odin leaned toward the driver and the door opened. Bob got on the bus, panting. He smiled as he lurched down the aisle past the kids. A huge collective sigh went up and filled the bus. He fell into his seat beside me. The driver let out his clutch as the light changed and closed his door as we pulled into Woburn Place.

We were on our way to Dover. Like I said, departure from London was uneventful. Just the sort of thing a social scientist looks forward to.

*  *  *

Each of these contretemps had its effect. As we pushed our way through Greater London I realized that each of the many messes had helped to weld us all into a real group. The faux pas with the luggage on the first day, the hassle with the money on the second, failing to keep to schedule — each had made us the more companions to each other. The shared agony of the lectures, of the miserable food, of the hot water faucets, of the hot bus — we could look each other in the eye and know that we had gone these miles together. The sigh that had filled the bus as Bob boarded that morning made it clear that to a substantial extent Group L faced adversity with arms locked together.

I looked around the bus. Group L was back in hometown formation. Only four pairs of kids broke rank. Jencks and Watson were sitting together again. So were Marina and Lana. Only David Abrams and Taylor Nash sat on the bank of seats in the rear, and they did not sit
together. It looked like the beginning all over again. I thought about the
group. For the first couple of days, the Hometown Groups and their
Independent-Registrants had functioned together as five separate little
galaxies. Indiana hung around with Indiana, Brooklyn had stayed in
Brooklyn, the trio from Wisconsin had not mixed with the Connecticut
contingent, and the Upstate New Yorkers had stayed together.

Very early on, the I-R's had proved most active. They went
through one of two situations. Either they were absorbed by their parent
H-T as a full-fledged member or they had started floating, looking for a
companion or two among the other floating I-R's or in the other H-T's.
The personality of the T-C had a great deal to do with this. Bloch, Jaeckel
and the Aikens had firm control over their groups and kept them together.
Needham had strong ties of affection with her two boys and they tended
not to stray. But Lenz was absorbed in his camera, and his kids split
into four groups. Cummings and Johnson hung around together but
Abrams, Montaigne and Portman were on their own. This morning
Montaigne was sitting with Cliff Jaeckel, but she tended to move with
Bloch's group. David Abrams was sitting by himself in the back of the
bus and had been the most independent of the entire group from the time
he overslept for the London tour. Portman was sitting by himself in the
very front of the bus.

The field trip to Avon had seen the group come together. On
that trip there were a lot of kids who had violated the H-T groupings. That
day Group L had been a group but with outliers. This position had been
reinforced by the skit. Yet this morning we were obviously starting all
over again. This was a new venture and it seemed as though a new
venture demanded old forms. H-T's sat with H-T's and Lenz's I-R's
floated. I know how they felt. For the first couple of days London and
the doms had been new. Then they had been old hat. It seemed as
though we had always been a group and had always been in London. With
growing comfort in the environment, attention had turned to the social
situation. But now we were starting all over again.

We were like kittens in a new home. Before they investigate
each other they've got to know what the back of the stove looks like.
Before Group L could continue the process of getting to know each other,
they had to see what the new day held in store. But our seven days
together could not be discounted.

We were a group becoming a group. Before we were thirty-
seven people. New we were many fewer.
Figure 9.0. Bus seating chart, 9:05 a.m., 8 July, on the way to Canterbury from London. Unoccupied seats are blank.
We did Canterbury in the usual half-hour. We passed through Dover on the run. Above us the castle floated in the air. Then we were on the boat watching the cliffs of chalk vanish in the summer haze. The boat was jammed. Half the world was on its way to Ostende, and most of it was standing or squatting on the deck. After a lazy time and a meal in constant motion we docked. We were in Europe. Immigration was the usual. If you weren't obviously leprous, you passed. Stamp, Stamp. Polite smiles hardened by constant use. Outside it was hot. In the distance was a long line of buses. We headed in that direction. Around us was flatness covered with trolley tracks and train tracks and overhead the sky arched mercilessly in a white heat. Sweat rolled down Mrs. Needham's face and I looked at it and liked it. It was a nice face covered now by a grin of resolution, that smile that says I'm-down-but-not-falling-any-farther.

The first thing we noticed about the buses was the shade they made just waiting for us. Then we noticed that each bus bore a letter. We walked down the line searching for "L." It was a big bus and from the outside it looked comfortable. Red curtains hung at the windows and the windows were high off the ground and still covered half the side of the bus. It was a clean machine. It was also going to be our home for the next three weeks. The thought didn't depress me. That surprised me.

The group eddied around the bus. Some got on. Most got on and got off again. It was too hot in there. Then they'd get tired standing around and get off again. A hardened core stood outside. Mrs. Needham offered to go get cokes. Several others volunteered. Money floated around. Taylor Nash sat on the curb and worked at the railroad tracks. If I'd left him alone he might have had them dismantled by the time we started. The luggage arrived and we helped the driver load it beneath the bus. Odin appeared and disappeared. We collected pop bottles and carried them to a trash can. We boarded the bus and settled into our seats. The driver flipped his switches and the motor growled...


Nothing but tension.

Odin and the driver conferred. Odin picked up the microphone and asked all the males to get off and push. We all got off and wandered around to the back of the bus. It towered above our heads. It was an absurd situation. We could never move this thing.
We put our shoulders to the bus and pushed. It moved, the motor growled, and then it coughed into life. As we got back on the bus we laughed. We'd pushed our tour bus. After that, nothing would ever seem absurd again.

On the bus things had happened. It looked more like the Avon groupings. Where this morning only four pairs of kids had broken ranks, this afternoon nine pairs did. Lana Monroe and Desmond Jencks were sitting together again, and Marina was sitting with Sven. But even more like the Avon trip were the five kids on the bank of seats in the back. Four of the five kids back there now had been back there on the Avon trip: Cummings, Johnson, Abrams and Prinz. Nash joined them this time. One thing struck me: three of the five smoked. The only other kid that smoked, Leslie Casyk, was only two seats up. It was interesting, and I had nothing else to think about.

I reached into my pocket for a cigarette to help the brain along. The pack was empty. I got up and wandered to the back of the bus and sat down next to Erica Cruz and bummed a cigarette from Karl Prinz. Then I had to bum his ashtray because there were none on the seats in front of me. In a way it was nicer at the back of the bus. Away from the courier and the T-C's the chatter was a little louder and a little less reverent. A little more relaxing. You could be yourself without falling asleep.

* * *

That evening in Brussels Bob and I had dinner with Odin. That's being polite about it. What we really had was a fight. Neither side was at all friendly about it and I got the feeling that Odin would have gladly slit our throats for a quarter a piece and danced a reel on our bodies for a dime. What we would have been glad to do was left unsaid. It was generally Odin's feeling that there had been no trouble in London over the maps, that I had invented all that to have an excuse not to attend the courier's meeting. And since I had missed the courier's meeting, I obviously could never be a courier.

The logic of his remarks made me swallow a potato whole and it burned my throat on its way down. "Somehow," I said, "I don't see it in so drastic a light. We're going to have hours together on the bus. I don't suppose you could talk to me then? I mean, I've seen your other couriers. I can pick up in five minutes what it takes them five hours to understand—"

"It is exactly that sort of attitude," Odin broke in, "that makes me extremely concerned, not only about the tour, but as well as for your role as a courier. This was exactly what I was feeling yesterday when
Bob broke in impatiently and with infinite weary: "Forget yesterday, Odin—"

"Or if you're going to remember yesterday, remember this morning," I added. "What about leaving Bob behind at the dorms? What about your attitude toward us?"

"It was a point I was making to all of the bus that no one will ever be holding up the bus while I am running—"

"Yeah, yeah," I said, "Bob can't hold up the bus for three minutes but you can let us sit there for half an hour—"

"It was an unavoidable situation—"

"And so were our mapping sessions," Bob said. "We are going to get nowhere if we worry about what's already happened. I'm willing to forget the thing this morning if you'll stop with the London maps already!"

"It's not the missing of the meeting by itself that is what is worrying me," pause, "but the attitude toward the tour that both of you are having with me now that is making me angry. Denis' remark about the other couriers is a reflection—"

"On no one but the other couriers. For God's sake, Odin, wake up. All I said was that I have a brain inside my head—"

Odin looked at me out of eyes heavy with cynicism. He was enjoying this dinner. His plate was empty. This contest of wills was what Odin was all about. My plate was full and my stomach was in knots. The ashtray in front of me was overflowing with butts.

"Then you are still willing to be the courier from Venice on?"

"Of course I am."

"Then why is it that you were missing yesterday's meeting?"

We went on around in this dance of incrimination and recrimination for an hour. It was a merry-go-round of the minds that wasn't merry. All it cost was energy. And pleasure. And the good feeling that had been with me when I got on the bus in the morning. It was a merry-go-round with a gold ring that when you caught it, you lost.
Figure 9.1. Bus seating chart, 6:00 p.m., 8 July, on way from Ostende to Brussels. Unoccupied seats are blank.
When it finally stopped I was to be the courier from Venice on and Odin would talk to me on the bus and explain the infinite mystery of checking into hotels in the evening and out of them in the morning. We staggered out of the restaurant into the Belgian night and Bob took me on a tour of Brussels.

We strolled leisurely along the wide streets trying to forget the hassle. We tried in vain. There is no forgetting a thing like that. You've lost more than an hour's peace. You've lost more than a meal. You've lost more than a fight. Somewhere you've lost a hunk of your life that'll never come back. What a way to go.

What puzzled me as much as anything was why we were on the trip at all. Not from our point of view, but from theirs. If they were simply being noble, helping science out with a big hand and a dollar cigar, then I could understand their attitude. I wouldn't like it any better, but at least I could ease off on the surprise. But that wasn't the way it was at all. It was an even trade, a business deal. They were supposed to get as much from us as they gave us. We were going to provide feedback to them about how the kids and T-C's were really reading the trip. We were providing them with a self-study program, and any information we collected was to be used equally—by us and by the tour itself. But both these things—our work and their self-study—were just lead-ins to the big prize: publicity. We were supposed to produce headlines. When we'd flown out to Missouri to firm things up with The Director, he'd leaned back in his Eames dentist chair and stared dreamily out the window across an endless rolling of green hills.

He had been talking about the stiff competition in the summer tour business, and now he was contemplating the sweet thought of squashing them. As his manicured hand sketched out the headline with an elegant sweep he'd said:

"TIME MAGAZINE: TOUR GROUP STUDIES ITSELF. That would be worth a thousand students to us. You can do it."

He'd looked at us man-to-man, clear gaze, level. From his point of view we were going to attract attention. Do a study, write it up in scientific journals, be picked up by the national media, preferably the travel section of Time. Make the tour a fortune and make back his costs many times over.

Our relationship had started on that basis. Business. All we asked in return was cooperation. Maybe The Director hadn't broken the news to the ranks.

As though we were playing street soccer we kicked that ball
back and forth between us as we worked our way to the center of the old city. The thing that I most appreciated about our relationship with the tour was the sense of openness and willingness to listen on the part of the leaders. If you tell them that most of the kids are sleeping during the lectures:

"But that's quite impossible. I wrote that particular lecture myself, you realize." That shuts you up forever. Yeah, tour group studies itself — just don't use your eyes. You might see something.

We were seeing things at that moment. We were seeing crowds of people jamming the approaches to the Grand Place. We edged our way into the square. It was surrounded by people. On our side of the square was a bank of wooden seats. Something was going on. We squeezed our way through the crush past the stand and standing on tiptoe caught a glimpse of some sort of pageant. Another stand was set up in the square and it was filled with people dressed to the teeth. At this moment in the square itself were troops of citizens got up in gorgeous costumes of long ago. I don't know my costumes well enough to say that they were Medieval or Renaissance, but whatever they were, they were easy on the eyeballs. From speakers came the sound of stately music, obviously Baroque, and to its time stepped the marchers. They carried enormous luxurious flags and bore on their shoulders as elaborate a palanquin as I have seen. The whole scene was bathed in the eerie light of quartz filament floodlamps. It was a tightrope act, poising the square between the 20th Century of the speakers and the floodlamps and the 16th of the flags and palanquin and costumes. Somehow it worked.

It seemed as though we could get a better view from the other side. We pressed ourselves out of the crowd into the warren of narrow streets surrounding it. They had the air of being backstage at the opera. Young men strolled around in costume waiting to enter the square and do their bit. We re-entered the square. It was less crowded but still difficult to watch the pageant. I looked at the square. It was a large space and it wasn't square. It was some sort of trapezoid. It was surrounded by buildings that had nothing to do with the 20th Century. Whoever had built them never dreamed of Frank Lloyd Wright or Le Corbusier. It was a chiaroscuro that bounced your eyes into the buildings' surfaces and rebounded them as fast as you could blink. It was cirriforms that grabbed your eyes and waltzed them around the square and then took them on a polka around the square and wherever your eyes rested did a minuet on your cones and rods. No one had to tell anyone that this square was something to see. The square said that. It said it hard and forever.
Over the heads of the crowd I saw flags flying in the air as graceful as gulls. They would go up and up and furl and unfurl in greens and golds and scarlets and the music from the speakers did nice things to your ears and still the flags were being thrown and all this against an endless procession of curls and swoops on the buildings around the square. The crowds were silent except for sighs that happened whenever a flag would flatten out in the air and trace fleeting arabesques of color in the night.

It was getting late so we reverently debouched from the square and slowly wandered home. Along the way a group of Americans stopped us and asked us something in an abominable language that was supposed to resemble French. We answered in English—the strain left their faces. We followed them at a distance to look at Le Mecanique, the diminutive statue of a small boy peeing forever on a street corner into a riot of flowers at his feet. The boy had been lost and the city had turned out to find him. His father had found him on this corner, peeing against a wall and had erected this small token of his gratitude. Around the corner we dropped into a lace shop and I picked up a tablecloth for Ingrid. As I fell asleep that night I saw the small boy peeing on a green linen and lace tablecloth set in the center of a magical square under a sky filled with colored gulls.

That was the story of the tour. A fight with Odin and a lousy meal. Then Europe to take away the strain. Sometimes the strain wouldn't let you see Europe and the day was lousy. Sometimes Europe wouldn't let you get hassled by the tour and the day was great. Most days were a little of both.

* * *

The next day was the ninth of July, the tenth day of the tour. On the endless flat stretch across Belgium and into Germany we did another set of stereotypes and took our bus seating charts. It was a busy day. We had lunch in Cologne and spent twenty minutes looking at the Cathedral. We raced along the Rhine to catch our boat and then waited in the sun for it to arrive. We rode up the river for an hour and then got off the boat and back on the bus. We arrived in Heidelberg. During the day people sat with a lot of other people. Bob sat with Bill Brown and then in the back of the bus by himself and then with Laura Johnson and finally with Robert Watson. I sat with Phyl Gordon and Bill and Phyl again and then with Marina. Most people were moving around a lot, getting to know each other, passing the time, looking out the windows together.
As we started up the Rhine, castles would start appearing on the high bluffs opposite us. Phyl Gordon would look at one and turn to me:

"Is that a ruined castle, Mr. Wood?"

"Well, Phyl," I'd say peering at the building, "it looks like a castle all right, and since it's filled with holes and all tumbled-down looking, I'd guess it was ruined. By the way, the name's Denis."

She'd look at the castle a while as if considering the rightness of my logic and then say, "Thank you."

After a while around another bend would come another castle.

"Is that a ruined castle, Mr. Wood?" I'd do my routine again. And I'd do it again with the next castle. And the next. For some reason we went through this with each and every castle. Sometimes it wasn't a ruin and I'd say:

"Well, you see the sun glinting off the windows so it's probably occupied. And the clothes on the line on the tower are a dead give-away. So it's a castle, but I wouldn't call it a ruin."

I began to wonder why I wasn't getting sarcastic, why I was getting more and more polite with each reiteration. When we got off the bus I found out why.

"Thanks a lot for all the information, Mr. Wood," Phyl said.

"You needn't thank me," I replied. "That's what people are for."

"Well," and she looked down at her feet, "it's just that no one's ever done all that for me before."

I kicked at the grass with my scruffy shoe. I noticed that it was coming apart on me. The things you notice. "Yeah, well..."

"Thanks again, anyhow..." And she was gone.

* * *

On the way to Heidelberg from the steamer trip occurred another of the contretemps that tended to unite Group L. The bus was equipped with a radio and as we whizzed along we listened to a German radio station. There was a lot of German on the air and that was
interesting but it was a pop music station and that was more interesting. Especially to the kids. Some of the music was even American and that was an occasion.

But it wasn't Culture and so it wasn't education. Whenever the radio was at its best Odin would open his case and pull out the latest horror of media-equipped tour buses. For the bus had not only a radio but a cassette tape player. He would shove the cassette in and the radio would vanish and a voice would announce the subject of the tape. It was one of the voices we'd heard during the lectures but how could you tell one well-modulated voice from another? They all dripped syrup sufficient for an ice-cream sundae or a presidential candidate. What followed wasn't just another lecture. It was a media–cool assemblage of readings and music and sounds. Hidden deep inside was Culture, presented in as "exciting" a way as possible. Thus the kids would eat it up and not realize that they'd swallowed a little Culture whole. It was like hiding the medicine in cherry syrup. And it was just as effective. Show me the kid fooled by the cherry syrup and I'll show you the kid fooled by the tapes.

Perhaps on a set of great loudspeakers in a quiet room the tapes sounded different. Over our dinky PA, they sounded like garbage. We'd heard many before. Odin presented these tapes as the greatest thing since Wheaties and the T-C's all perked up and tried to keep the talking down and pretended they could hear them. At first the kids thought the volume was too low and Odin turned it up. That just increased the ambient noise and made the hearing more difficult. So the kids developed a stoic attitude toward the tapes, and tried to mentally shut them out or fall asleep.

But on this trip to Heidelberg they talked. To talk over the tapes meant you had to raise your voice a little. So they did. Everyone was enjoying this leg of the trip. So Odin increased the volume. The kids talked louder. So the volume went up. It was tactical escalation, musical chairs with the aural environment.

Suddenly there was absolute silence. Odin had taken the tape off and was reaching for the mike. Guilt and panic swept the bus. In this atmosphere Odin dressed us up, then dressed us down. Guilt and panic under this attack turned to sullen righteousness. The kids turned into a block of granite. The T-C's didn't know where to go. It was a lovely mess and created the perfect atmosphere, that just-right blend of ease and comfort under which to see the heritage of the ages in Europe.

It was hot in Heidelberg that night and I slept as poorly as I ever hope to.
After a fling at a castle the next morning and a chance to buy cuckoo clocks and beer steins we left for Ulm. We had lunch outside Ulm in a restaurant that provided a distant glimpse of the cathedral spire from the front door. Inside two-hundred and fifty kids were being fed in waves. I ate with Leslie Casyk and Tracy Cummings and Laura Johnson. Laura was leaving us here and she was scared stiff. She was off to Vienna to see some famous horses. She sat there filled with personality and no food. She poked at her plate. She was a thin girl, with patrician features surrounded by loose attractive blond hair. When she smiled you looked around to see if there was a handkerchief you could pick up. When she didn't she just looked petulant. She wasn't smiling now. She snapped at Leslie. She snapped about the trip. She snapped about everything.

But she had guts. She was leaving the security of the bus for a long train trip by herself among unknown peoples speaking unknown tongues to see some horses. She must love horses. As she tooled off in her cab she looked like she needed something, or someone. I wondered if I shouldn't have gone along to pick up her handkerchief.

On the bus that afternoon both Bob and I took the mike. We both did something no courier is ever supposed to do; we looked at our audience. Maybe it was always hearing Odin's back speaking that built arrogance into his words. Bob talked about ecology and how everything added up into home. He wasn't bad. I talked about what was passing outside the window and got the kids to talk back. That's a trick on a bus with one mike and it's in your hands. But we discovered that someone in the back could pass his words up to the front in a verbal chain. David Abrams was the star and starter that time. It was fun. Odin was impressed.

It was fun mostly because the kids were as loose that day as they'd been so far during the trip. The old H-T groupings didn't seem to matter. They had found other friends in other groups. New groups were emerging to replace the old. Taylor Nash and Joy Gray sat together for the first time that day; Desmond Jencks and Lana Monroe were sitting together; Marina was sitting with Cliff Jaeckel; Rhod with Miss Bloch; Watson with Mrs. Needham; Tracy Cummings with Leslie Casyk; Susan Lincoln with Sven Heller. Only a few old friends sat together still; Wanda Pierce with Candy Fisher and Betty Baker with Claire Mayo. These couples were friends long before the trip. They had come together and were staying together.

The new groups that were emerging were trip groups, bus groups. Already these groups had hard outlines. At the front of the bus
Figure 9.2. Bus seating chart, 2:30 p.m., 10 July, on way from Ulm to rest-stop before Innsbruck.
were the T-C's, the serious students, the lonely unattached kids, and the guide. They spent their time looking out the windows and taking notes and reading guidebooks. The lonely kids just looked. This was the front of the bus culture. At the back of the bus was another group. These kids had been sitting back here since the Avon field trip. They were noisy. The talked. They smoked. They ate incessantly. They did their hair. They threw pistachio nut shells on the floor. They read. They slept. They played cards. They ignored Odin and the tapes and most of what was going on outside the windows. This was the back of the bus culture. In the middle of the bus were the kids who could go either way at the drop of a hat. They could be serious and interested or they could play cards and gossip. These were the kids who mediated between the front of the bus—authority—and the kids at the back. And they mediated in every way. In the front of the bus was authority of a simple logistic sort: how long we'll stop here, where we eat, where we are. These types of information were never heard at the back of the bus. These kids were always saying What? Where? When? How long? The middle of the bus would tell them. In the front of the bus was authority of a moral sort. These people were righteous and knew it. No hanky-panky in the front of the bus. No mess. No litter. But the back of the bus couldn't buy their authority. They bought it second hand from the middle of the bus. So it was on down the line. Front. Middle. Back.

At this time on the trip, the powerful personalities among the kids were in the middle. Desmond Jencks, who organized the London skit, was there. Desmond Jencks had also been the first, with Robert Watson, to break the sex line and sit with a girl. These two girls—Marina and Lana—also sat in the middle of the bus. These were the kids who could speak for the group as a whole. If a kid from the front of the bus spoke, it was brown-nosing. If a kid from the back of the bus spoke, it was smark-alecky. If a kid from the middle of the bus spoke, it was just real words. Of the T-C's, Cliff Jaeckel and Mrs. Needham spent a lot of time in the middle of the bus. And now Taylor Nash and Joy Gray sat together in the middle of the bus. As we'll see later on, it wasn't who sat in the middle of the bus that gave it what it had. Whoever sat there had it. Authority was the prerogative of the front. Hanky-panky the prerogative of the back. In the middle, nothing but sheer power.

It was a nice theory, but that's all. It was a theory. Just something to chew on on the long straight stretches. And then we stopped for a break in a gorgeous little town high in the hills and a little after that we were pulling up into the mountains and nobody did anything but stare out the windows at the mountains. Nobody but Porter Portman and Odin, that is. Porter was panting to see relics of the last war. I mean, mountains were very nice but give him a wrecked hulk of a fighter or an
old gun site for true satisfaction. As for Odin — well, he had seen these mountains a million times. We were coming into Austria, his favorite country. He sat back in his seat and told us the history of Austria. He told us all about its beginnings in the mists of times and its heroic role up to the present. When he spoke of Austrian neutrality and its role for the future of mankind, there was a glow of pride in his voice, a syrupy satisfaction you could have poured on a waffle. There was only one thing wrong: no one was listening. They were too busy looking at the Alps.

We dropped down into Innsbruck like an eagle dives for a lark. Our breaths stopped. Then there was Innsbruck before us, our home for the next two days.

* * *

Our hotel was up a steep incline just feet from the river. It was check-in time. There is a rigorous ritual to be followed at check-in time. The courier (me) approaches the desk and asks for the mail. This is handed out immediately on the theory that it distracts the kids and T-C's while you wrestle with the rooms. In your hands is a list of the kids and T-C's. Another list shows the preferred room-mates. Hopefully, before you reach the desk, you've worked out pairs or more of kids that won't mind being together and you've arranged this list with your knowledge of what the hotel has to offer in terms of rooms. Some have only doubles. Some only triples. Some mix them up. According to Odin, this hotel would be doubles, but I'd made out a triples list to be sure.

The clerk always tries to help you. He has made a list of room numbers with the number of beds beside them. You assign each kid a room number and beside each room on the clerk's list you jot down the names of the kids. While you are doing this the kids are jammed up behind you waiting for their rooms. They can't do anything else so they pant. The mail gambit is supposed to help this, and sometimes it does. But most of the time there's little mail and most of the kids want to read it in the privacy of their rooms anyhow. So I get my lists and lay them on the desk. The clerk says:

"Four rooms with five beds, six rooms with three beds, three rooms with two beds... Okay?"

The Aikens, another double? Me and Bob, the third double. Hand out these keys. NO! NO! Do the whole list, then hand out the keys.

So I hand out all the keys and everyone is happy, but first I inquire about dinner time and announce that to the group. Bags. Make sure the bags get to the right room. Now put up the courier bulletin, but first make out the courier bulletin. This contains the schedule for the next several days. Now copy the rooming list so that each T-C will have a copy and know where all his kids are.

Now pass out.

That evening Bob and I sat on the terrace of a cafe hung above the green waters of the Inn River and considered the project. We figured we'd been doing okay so far. We had a set of stereotypes and an adjective checklist completed and in the data case. What were we going to do for Innsbruck? The adjective checklists had gone so well we decided to try for another the next morning after the sight-seeing trip. That would seriously disturb our supply situation so we decided to print 400 additional copies. That would have to wait until Monday. In London the use of the place names list had been a success, so we needed to make one up for Rome. Bob would have to do that, since he knew Rome and I didn't. He'd need a typewriter and a map of Rome. I knew that Odin had a typewriter and a map of Rome. I promised to deal with Odin.

We toyed around with two other projects born of the moment and of subliminal thoughts left over from our predeparture planning sessions. One of these was to collect a series of postcards on Innsbruck. These we would arrange on a board of some sort and pass around the bus later on, maybe on the way to Rome. The kids would look at the postcards and fill out an adjective checklist on Innsbruck from the postcards. This we could compare with the list we collected in the flesh. What for? Who knew? We were collecting data at this point, not thinking.

The second project was more interesting. We would get our bus seating chart copied. All the kids were interested in this aspect of the project and we figured they'd be game to try and fill one out from memory. Say on the way to Venice we'd have them fill out a chart for the way people were sitting on the way to Innsbruck. It would be interesting to see whom they left off the bus, whom they remembered sitting next to whom, and the perfect day to have them remember would be the day Laura was on the train to Vienna. How many people would put her back on the bus? Both projects meant work. We'd need to collect the postcards, find a board, get glue, put them together. For the other, all we had to do was to print more bus seating charts. We also wanted to compile checklists of all our data so far, to figure out who among the kids was
cooperating and who wasn't and go to work on these.

We had our work cut out for us. In addition to all this there was the morning sightseeing, an evening at the Tyrolean dances, the following morning of lectures and a courier meeting that afternoon that I wouldn't have missed for all the tea in China. There was going to be no vacation in Innsbruck.

We paid for our beers and toured the town. It looked like a nice town, like my kind of town, a small town in mountains. I anticipated a nice two days here. We strolled down Maria Theresien looking in the shop windows. On a door was a poster for an organ concert to be held the next day. I thought how nice that would be. We walked down the other side of the street and into the old part of the town. It looked like a nice town to see by daylight. Then we crossed the bridge over the Inn to our hotel and on to bed.

Daylight came as it did all through Europe — far too early. The sun was always rising long before I wanted to. The townspeople seemed to rise with the sun. Long before five in the morning heavy traffic was rolling past our window. I shuddered and walked down the hallway to the john. This was some hotel. A basin in the room, a toilet in another, and the bath on another floor. What floored me was that I liked it.

Light was falling over itself trying to get into the dining room over the boxes of flowers at the windows. I sat at a window table and inhaled strong black coffee and ate bread smothered in sweet preserves. The kids bounced into the room, sort of like the sunlight. Outside the air was warm but crisp, like English muffins hot from the oven. The sunlight was like butter.

The bus was even different. After two long days of hard use, it had acquired a worn look, like the soles of my shoes. Now it sparkled inside and out. Fred Astaire used to sing: "If there's a shine on your shoes, there's a melody in your heart." He knew his stuff. The bus took us up the side of the valley to the site of the winter Olympics. We parked in the shade a lot of trees were giving away for nothing and walked up to the foot of the ski jump in the sun. We stood on the lip of the green pocket that once braked the speed of the ski jumper. On one side of us was the jump, a long, long perfect slope of green that terminated abruptly in the middle of nowhere. Where it stopped five colored circles linked together. In the winter it was covered with snow and as dangerous to come down as the edge of a razor. Even now, mantled in green, it exuded an aura of menace, but of healthful menace. Maybe I meant
exhilaration. Maybe I didn't know what I meant. It was too nice a day to care. Beneath us spread the red roofs of Innsbruck straddling the Inn River.

But somehow all this was felt rather than seen. It all had competition of the worst sort. You couldn't take your eyes off the mountains, the mountains that climbed and danced and soared and sported, the mountains that stood there and defied and challenged and mocked and encouraged, the mountains that had seen it all, the mountains that could watch anything, the mountains of gray and blue and green and ermine. You tried to look at the town and found yourself looking at the mountains. You turned to look at the ski slope and your eyes left the ski slope and climbed. You tried to follow the road and followed instead the jagged edge of the peaks. They had a monopoly on the scenery in Innsbruck that no committee in Congress could ever do anything about. They were it.

I bet they knew it too.

We wandered on back down to the buses. In the shade nearby were a bunch of tables under roofs. On one of them lay Porter Portman demonstrating something about shooting to someone who couldn't care less. Porter, our militarist in residence. In London he'd gone only to the Imperial War Museum. At night in his room he read about making military models. On the road into Innsbruck he had eyes only for ruins of the war. Now it was guns all over again. He was a big kid, the biggest on the tour, with a gait that was a mockery of walking. His clothes tended to fit him the way a stall fits an ox. He wore glasses and picked his nose. He was wonderful. He had a nifty line he used to greet people with. It went: "Hi! I'm a redneck from Mississippi. I would have voted for Wallace in the last election if I could." Porter tended to make friends the easy way: enemies first. In his case they seldom changed their minds after that first encounter.

Under all that was a scared kid who knew he knew nothing and didn't know how to start.

The bus rolled on down the mountain. It stopped beside a small, unpretentious yellow church that besides being small, unpretentious and yellow was as graceful as a hummingbird and as perfectly proportioned. We went inside. If Heaven is anything like that, Satan better keep his distance because I want in. It was the Grand Place in Brussels all over again. Nobody had said anything about this. No one had to. Even Odin had kept his mouth shut knowing he could say nothing that the inside of this church couldn't say ten times better. As each kid walked in he caught his breath without knowing that he did it and without knowing why. It was like that. Outside I rubbed my neck from the pain of looking and
blinked my eyes from the joy of seeing. And I walked right back in and did it some more. There couldn't be anything else to see. The bus stopped for the last sight. We stayed on for five minutes and everyone did the adjective checklist. Then we Indian-filed our way toward the Golden Dome and the Cathedral. I was at the end of the line just behind Taylor Nash. I hurried to catch up and came beside him as the bells in the tower tolled noon.

There is no sound quite like the sound of church bells high in a tower tolling a Sunday noon. Especially when they have the mass of a large cathedral in which to resonate. We both stood still and let our ears fill with the sound, our heads cocked at that crazy angle people use to listen. They stopped and as we stepped into the shadow of the porch he said something about the sound of those bells that made me stop and look at him. He had heard them. I was amazed. Most people have ears but the people that truly use them are as rare as an honest used-car salesman. He said something else that told me he knew he could hear and that he was interested in sounds. He said sounds, as though he understood the distinction between sounds and music. I mentioned the organ concert that night. He was interested. Wow. The things you find on a summer tour. If you listen hard enough you can even find a pair of ears.

Bob and I spent the afternoon in our room working. That might seem to be a crazy thing to do while the kids were cablecarring to the tops of mountains, but that's just what we did. We had a lot of work to do. We went through everything we had so far and made up lists of who had completed what. Bob would sit there on his bed with a stack of folders on his lap reading off names which I would mark off on the lists. We sat surrounded by the litter of the project and it was terrific. Sunlight bouncing off the surface of the Inn sparkled on the walls and the air was fragrant as though Spring had just come to New England, fragrant and soft as fine spun gold. I figured we had collected as many of the predeparture mailings as we were going to get so I totaled them. We had nothing at all from nine kids. Rhoda Noyes had sent us nothing. Neither had Trudy Blom, but since she wasn't even on the tour, I couldn't much blame her. Laura Johnson, Agatha Jones, Porter Portman, Karl Prinz, the two Browns, and Taylor Nash were the rest of the villains.

But that was predeparture. That was long ago. How had these eight been doing lately? Basically, they'd been doing fine. Of the last four exercises, five of the eight had done all of them. Agatha Jones, Porter Portman and Jame Brown needed something special: they had done only one of the last four exercises. They had things in common. Agatha was a Jesus freak. She was also a small, mean looking girl with dusty colored hair and a nose you could slide down. I figured she looked mean
because she was always so serious. I had caught her smiling once but
the look she followed that up with made me feel like a thief. I recalled
her argument with Joy Gray about divorce. She made Joy so mad she
looked like pulling hair. But the righteous are very strong. Agatha
hadn't batted an eye. She was also very lonely. I mean God is fine, but
when he's your only companion things can get rough. Jane Brown was
beyond me completely. She lived in another universe hidden behind eyes
of slate. When she came into mine she was nice and as the trip grew she
came into my universe more and more often. Then you could see that
she, too, was lonely and a little scared. The loneliness and the fear is
all they had in common with Porter. They each wore their mask at a
different angle: Jane's was retiring, Agatha's was adamant but reticent,
and Porter's was bullying belligerance. Neither of us had a line into
Porter or Jane. We just tanked up on hope that they'd come through.
Bob figured if we couldn't get Agatha to participate in the regular
exercises, maybe she'd draw floorplans of churches or something along
the God line. I wished him luck.

We turned to our next group. These were kids who had sent
in the predeparture things, but who weren't doing too well now. There
were four of these: Vanessa Garrison, Bobbi Seward, Wanda Pierce,
and Candy Fisher. It was less clear with these whether they were with
us or not. Their records were simply very spotty, a hit here, a miss
there. Bobbi was still a grey sheep for us, a total blank, an unknown
cipher, but she was the constant companion of Jane Brown. Vanessa was
another story altogether. She palled around with Janine Eber, our
predeparture star. In London she had proven she had plenty of guts,
spending an interesting Sunday on her own. She was enigma personified.
I'd look at her one minute and see a lady of twenty-five. In the next
minute she was ten. I had no real fears about Fisher and Pierce. They
were busy getting it all together. I just hoped they'd get it together before
we got back to New York.

Why am I telling you all this? Because that was how we spent
one gorgeous afternoon in Innsbruck and because at that point in time
nothing mattered half so much as why Vanessa wasn't mapping and because
I want to pound the names of these kids deep into your skull the way they
bore into mine. We shuffled our papers around a little longer and went
down to dinner.

Dinner was early that night. After dinner I was to lead Group
L on foot to the hotel on the main drag where they'd watch Tyrolean
dancing. So they came to eat dressed, or as dressed as I ever saw them
for a long time to come. With the clothes came a hum of excitement and
most of the hum was about Porter Portman. Bob and I sat together and
the news came to our table in hot flashes. Porter had climbed off a
mountain, was the way I first heard it and I looked around for him. He wasn't eating.

"What do you mean?" Bob and I asked in unison.

"Well, you know we went up the mountain in the cable cars. Well, at the top is this space... the view was simply... You didn't go? Well, anyhow all of a sudden I looked down and there was Porter climbing down this cliff... It was this straight... And Cliff was yelling at him and you know how calm Cliff is and Omar and well... I was never so frightened. I was sure he was going to fall off... but he got back up somehow. We were all so scared." And so on. We heard the story from everybody but Porter. He never mentioned it at all.

The Tyrolean dances were a big success with everyone except Lana Monroe. Something she drank made her a little sick. In fact, she threw up, and talked a lot about things she didn't mean to. If you know what I mean. I didn't see it. I took one look at the auditorium and opted for a cup of coffee with Bob at a nice shop in the old city. We made it back to the exit just as the dances ended and the kids started coming out. Taylor Nash appeared with Joy Gray in tow and the three of us grabbed a cab and headed for the organ concert. It was in a plain church at the edge of town.

The interior of the church was as simple as the exterior and we sat on crude wooden benches to listen to as fine a concert of organ music as I've heard. It was a short history of the music for the organ and the selections were chosen by someone with a sense of humor. The Buxtehude "Fugue in C Major" was as funny as ever and I grew goose-pimples trying to keep from chuckling out loud. The beautiful thing about the concert was the audience: entire families with little kids had come and they didn't listen as though they were at church. There was head bopping and foot tapping. Taylor and Joy sat like good Americans, stiff and unmoving, practically holding their breath. After all, this was classical music...

"How'd you like it?" I asked, accepting one of Taylor's Kools.

"It was OK."

"Why did you laugh in the middle of one of the pieces?" Joy asked.

"Because it was a very funny piece of music," I answered.
"What do you mean?"

"I mean the guy that wrote it was having a good time. He'd get carried away and work himself into a corner and chuckle as he found an out."

"But how did you know that?"

"I listened. Didn't you?" I changed the subject. "Let's walk home. Do you know the way?"

Joy didn't so I said, "Well then why don't you lead us?" She agreed and off we went. This was Project Group L in action and we all knew it. We talked about the project and the trip and the tour as we walked. They were both nice kids. Taylor was looser than Joy but both were explorers, rangers as we would have called them in predeparture. Joy took us straight downtown without deviation. We parted on the Maria Theresien. They walked on home and I went to get Odin's typewriter for Bob.

I reached our hotel about an hour later. Cliff Jaeckel was dangling his legs on the wall beneath our hotel and I figured that was as good a time as any to catch up on my leg dangling. I hitched myself up beside him and we chatted about nothing and about Porter Portman and what was ahead. Like that night, for instance. That night a group was planning to sleep out on a mountain knee so they could see the dawn coming over the mountains. Omar the Camera was leading them. The kids began to collect on the sidewalk with blankets and other stuff. It had the air of a millionaire's pick-up expedition to the Antarctic. Taylor Nash and Joy were going. So was Laura Johnson, fresh from her adventures in darkest Europe. Karl Prinz, David Abrams, Tracy Cummings and Porter Portman made up the rest of the party.

"Hey, Denis. Why don't you come along?" It is a nice thought Taylor, but I'm courier and I've got to get up and make sure the cook doesn't put arsenic in the coffee.

"Good Lord, what's that?" I nudged Cliff in the dark. Coming across the bridge was Robert Watson supporting a weaving Candy Fisher. If the kids had been allowed to drink, I'd have sworn she was drunk. When she got close enough, I knew she was. She was also crying and talking a mile a minute. Cliff jumped down to help Watson get her to her room. After a while they reappeared with assurances as to her safety and Watson decided to join the sunrise expedition. They straggled off into the night dropping blankets and cameras.
I wished I was going.

Cliff went to bed and I sat there dangling my legs enjoying
the night. Little cars would beep in falsetto as they wheezed by. I
trailed them with my eyes, lazily, like a fish browsing in a sunny pool.
As my eyes swept back down the hill, they froze on a blur. Wanda Pierce
was leading Candy Fisher out of the hotel and up the hill. As courier it
was none of my business. As social scientist, it probably wasn't either.
As Denis Wood, I wandered up the hill to see what was going on.

They were sitting in a little plot of grass in an angle of the
hotel banked up against the wall. Wanda was acting concerned but not as
if it was the end of the world. Candy was moaning and thrashing about.
At first she refused to talk to me. "Go away, go away," was all she
would say. She wasn't all that drunk if she ever was but she was
crammed to the eyeballs with remorse, remorse and anticipation. They
both wanted to talk and I learned a lot about life in a small town in Iowa.
First Candy wanted her boyfriend. Then she wanted to go lie in the grass
of a park down by the river. I thought that idea stunk. Then she talked
about what she wanted from life.

She wanted to work when she got home, anywhere. She
wanted to make enough money to buy a white fast small car. She wanted
to jack up the rear and drive her dream to Florida and get a job and have
fun.

"What kind of fun, Candy?"

"I don't know...just fun." Her voice had a high keening in it
like a cornered dog. "I want to lie in the grass with Fred."

"Where's Fred, Candy?"

"He's on an Army base in Louisiana...We're supposed to get
married," Pause. Hiccup. Wail. "I don't want to get married," and
she'd start crying.

They both wanted to know what Bob and I had learned about
them from the psychological questionnaires. I told them we hadn't
looked at them very seriously so far.

Candy looked at me like a naughty girl and said smiling: "We
lied on them."

"What do you mean?"
"We made up the answers," Wanda said, "together."

"We didn't want you to think we were icky or anything," Candy added.

"Well, you want to fill out another set? I don't think you're icky. Why do you think you're icky?"

"We don't do good in school. We don't have any friends. The somebody-or-others always give themselves airs in church. They sing better than we do. My mother always says I'm stupid."

"I guess we are icky," Wanda said. Wanda had a sense of humor. She was a strong girl. She could laugh at herself. I only wondered if she ever took herself seriously. After an hour of this we all entered the hotel, and they went to bed. But probably not to sleep.

I walked up the stairs. On the second floor Desmond Jencks stood talking to Lana Monroe. I talked with them for a while and then Lana went to her room.

"I'm tired," Desmond said.

I pulled out my watch. "No wonder," I said.

"I don't mean that. I mean I'm dropping out of the trip." I understood him. He meant he was going to fade into the background and let his personality have a vacation.

"This ego business is wearing me out." If he wanted to spill it, I was game. I got out a cigarette. It looked like it was the night for confessions. Desmond is an adopted child and more than anything he wants to do well, to prove to his parents that he was worth their effort. I'd sure like to meet them. They sounded keen. I wondered how old he had been when they started making the point. Somehow he ended up giving me a list of his accomplishments. He was head of this and head of that and president of his senior class and star athlete and anxious to get into college and make it in the medical profession. When he talked about the two ulcers he'd already had there was mingled pride and scorn in his voice, pride for the effort that gave them to him, scorn for the weakness of his body. Looking at him and listening to his calm frenetic voice I felt a million years old. I stubbed my butt in the dirt of a potted plant and abruptly said goodnight. I was hearing too much about too many other people's lives. It made my skin feel dirty.
I went up to my room and took a bath in the sink and passed out between the sheets. Hoagy Carmichael whistled in my ear:

Sometimes I wonder why I spend the lonely night,
Dreaming of a song, the melody, haunts my reverie,
And I am once again with you...
Oh, but that was long ago,
Now my consolation is in the stardust of a song...

* * *

The next day was more of the same. More sunshine, more beautiful mountains, more green river, more Innsbruck. In the morning there were also the lectures. They were held in the gym-auditorium of an elementary school on the edge of town. I led the bus there. For the first time since the trip from the airport in London I was in the courier's seat. Odin sat somewhere in the back taking notes. The lectures were the usual once-over-lightly-with-hash-browned. The first was on German national identity and the 19th Century. It might have gone over big in an advanced seminar in something but not with the ahs, ums, coughs, and stumbles we heard. The postage stamp size slides didn't help either. The next was by an old lawyer who talked about the legal implications of Austrian neutrality. That went over like a ruptured appendix. His slides were great too. They showed sixty-color maps of Austria that couldn't be read in the book they came from and on the screen were just blurs of color. The third lecture won my heart. It was a history of Austrian music with musical examples. They told us about Mozart, Beethoven and Strauss. Never mind about Berg, Webern and Schoenberg, the kids wouldn't understand that stuff. They couldn't understand the stuff that came out of speakers I could lose in my hands either. No one could. They might have made a decent pair of earphones but they were never made for an auditorium. The final lecture was by Odin himself. It made the first three look like what they were. He showed huge slides in pairs. On the right was something American, like the Marina Towers in Chicago. On the left was something European, like the Tower of Pisa. The slides were great. I only wish I had understood what he was talking about.

Cliff Jaeckel spent the morning against the wall at the back taking notes—on how not to run a tour lecture series.

The courier meeting that afternoon was not so long that I hated more than an hour of it. One courier kept asking to have the route repeated over and over again. I escaped into the afternoon and Bob and I went to pick up our adjective checklists and the bus seating charts. We also picked up our postcards and did a little shopping. We hung over the bridge on the way to dinner and watched the Inn rushing away beneath us with creamy furls of froth that seemed to be afraid they'd miss something
downstream if they didn't hurry. The water was the dusty green of
eucalyptus leaves after a rain has scrubbed the dust to a mruky green.
The green went with the grey of the mountain flanks and the creamy froth
picked up the white in the snow on the high peaks. God had planned it
that way, I guessed.

Bob went in to dinner and I went up to wash. When I came back
down he was seated at a window table with Agatha Jones. My food came
and while I ate I listened. Agatha was trying to tell Bob why she wasn't
going to draw church floor plans for us. They were talking about the
little Baroque gem we'd been in yesterday. Hunks of her conversation are
with me now, like stale crusts of bread:

"Of course I was greatly moved by the beauty of the church,
but I know they didn't know what God was...A church is when two
Christians come together, and I just know the makers of that church
weren't Christians...I was moved by the beauty of the church but I could
tell it was built to exalt the builder, and not God...You can't see a church
without seeing the congregation. The congregation is the church."

Bob said something or other. She said, "You couldn't believe
because you don't have the faith to believe, to feel. I have faith. I know
God. I can't do your maps because you're trying to get something out of
me I can't give to you. I give myself to God and God is mine."

I poked at my boiled potato. In my mind Agatha's voice turned
into Candy's. I compared the two. They had one thing in common. At
their tender age they had life all psyched out. They knew what it was and
knew what it had to give them. For Candy it offered a job, fun, and a
jazzy white car. For Agatha it offered God. I chewed a potato for the
both of them and wondered if they'd ever noticed the mealy yielding
substance of a potato. Somehow I doubted that they had.

Janine Eber and Vanessa Garrison rushed panting and laughing
into the room. Janine came up to our table, face flushed and smiling, eyes
sparkling and dancing.

"We've been on a picnic," she announced.

"And you're all wet," I said. She looked down at her clothes
and laughed. Vanessa started talking too. I flipped the page in my note­
book from the Jones conversation and started writing. Good old Wood.
Everything is something for the mill. Rhoda, Janine, Vanessa and Susan
had gone on a picnic down the river with Desmond, Watson, Taylor Nash
and Cliff. They'd had three bottles of wine, two loaves of bread, three
kinds of cheese and peaches, cherries and apples. Janine had started the
fight. Desmond had pushed Rhoda in the fountain, Laura went around spitting streams of water on everybody and tossing a Frisbie, and Watson worried about his wig. Telling me about it was as exciting as doing it.

"Do you have it all down?" Janine asked and she looked over my shoulder to make sure. Her eyes twinkled. She was having a ball. She ought to, she was still full of life. I wondered if she'd ever grow sure of life like Candy and Agatha. Her eyes said no. I was glad.

Like I said, this day was more of yesterday until sometime after midnight. Bob and I were packing things when someone knocked on our door. It was a strange knock, like whoever was doing it was about to die. I opened the door. It was one of the kids. He was about to die. He was shaking and his teeth were chattering.

"Can I talk to you?" he asked. I said sure and waved him in.

"Not here," he said, "outside." I looked at him again and said sure.

I followed him down the stairs. Something had scared him and scared him bad. We walked up to the little corner of grass and sat down. He rocked in agony.

"We had to talk to someone and we decided to talk to you," I got out a cigarette that I had trouble lighting. I nodded at him.

"One of the kids has been taking drugs — pills. I don't know where they came from, but we think someone in another group. Anyhow, she's passed out in her bed. What are we going to do?"

I asked who it was and he told me. I nodded again. We talked about it some more and I said we'd have to talk to Bob. This was out of my depth. He agreed. He guessed so. We walked back into the hotel. On the first landing five kids sat there with worried expressions on their faces. They talked in whispers. What's going to happen they wanted to know. I said I didn't know. On the next floor another group of kids were talking in hushed voices to Bob. All the kids knew already. Everybody always knew everything in this group.

"We're going to have to tell the T-C's, Bob," I said. He shook his head.

"Let's have a group session with the kids and talk it out." I looked at the idea and didn't like it. I could see his stance and I admired his humanity. But it was rotten politics. I kicked myself thinking that
but kept on thinking it.

"We're going to have to tell Odin. The kids downstairs think she should be sent home."

"I want to talk it out with the kids first."

"Bob, they're going to find out about this. How long do you think it'll take. Someone is probably telling one of them now. The kids are scared. Hell, I'm scared."

"We don't have to tell the T-C's. Let them find out. So what? The kids came to us. Let's deal with it."

"Bob, if nothing else hung on this, I'd say terrific. Something hangs on this. The Project. My project. Our project. If we cut out the T-C's and Odin on this, they'll find out. Then where will we be? Okay, so I'm inhuman. I didn't come on this tour to do anything but complete this project. I'm not selling it down the river for this."

"We don't have to tell the T-C's, Denis."

"They'll find out—"

"They already know," a voice said from the stairs above us. We looked up and saw Miss Bloch in a red bathrobe. She looked like Fate personified. She looked like a block of granite. She came down the stairs like the British Empire.

She looked at Bob. "Keep it from the T-C's?" Her scorn was immense. Bob switched gears and kept right on going. He used her first name. It was Germaine this, Germaine that. She listened. I guess she realized that Bob had reasons, good, sound reasons. It was hard to believe. We discussed the whole thing. How was she? Bob had checked. She was just sleeping now. We agreed on one thing. Odin had to be told and the final decision, whatever it was, would be his. There was comfort in this, but it was cold comfort. It was dirty comfort, like cheating on a friend to get ahead on a job.

Bob and I walked slowly to Odin's hotel. I had my room key in my hand and twirled it nervously. My mind twirled with it. We were crossing Marktgraben on Maria Theresien when Bob looked at me and said:

"They all take drugs you know."
My stomach suddenly hurt very badly. "How do you know?"

I asked.

"I don't know," he said, "but I can tell. I'm sure so-and-so's
do. Things they let slip. You can tell."

"I don't believe it!" I stated flatly. He shrugged knowingly.

"Don't," he said. And then I did. I threw the room key on
the sidewalk. For some stupid reason I felt betrayed. For some stupid
reason I had felt that in return for my liking them all, that they had owed
me something. That understanding hurt. The realization of my arrogance
hurt more than anything, of my unconscious dealing with them, trading my
smiles for their lives, as though my smiles carried with them the
righteous force of my own peculiar morality. I picked the key up off the
ground and we turned into Odin's hotel.

"Good evening Rhoberrt, Daynise," said Odin. He was
standing in the hallway. We conducted our business there and in less than
ten minutes were on the way back to our hotel. Odin had said that we
weren't out to punish people, but to help them. She would stay with the
tour, but he would talk to her and extract a promise to behave. It sounded
slightly flimsy but that was his problem. I suppose he'd had sufficient
experience. I didn't know. I didn't know anything. I was naive, a little
arrogant and very stupid.

I felt about as useful as yesterday's want ads. I tried to
visualize the kids in my mind. I went over them one by one. How about
so-and-so, I'd ask Bob. He'd say doubtful or certain or he couldn't tell.
Sometimes he'd say absolutely positive and I'd groan. I looked into the
faces of these kids and I saw strangely distorted masks. They were
leering at me, derisive, degenerate, leprous faces. The kids I liked
best grinned at me the most maliciously. I thought I knew them. Now I
knew I didn't. I was a sham, a fraud, a pretense. All my groupings and
charts and thoughts didn't add up to a hill of beans if I missed this. We
reached the bridge and I hung out over the water and felt its coolness on
my face. I saw the kids down there drowning, gurgling, and liking it.

Then I saw the green water.

It was real. I could touch it if my arms were long enough. I
felt the spray of it on my face and heard rushing and swirling and shook
my head. My head cleared. Deep inside me a wonderful warm feeling
began. As it grew in me I started laughing. It was a wonderful laugh, a
healthy laugh, the sanest sound I'd ever heard. I saw the lights on the
river banks and the trees moving in the breeze and all around me I felt
the hugeness of the mountains and the enormity of the sky. I threw back my head and laughed with the stars.

Who had I been kidding? The kids didn't change because of this fact. I had lived with these kids for two weeks, I knew them. They were human beings, mostly nice and some sad. So they popped some pills and smoked a little grass. That said more about the inefficacy of drugs than it said about the degeneracy of the kids. I had been laboring under a specter sold to me by magazines and TV. I saw the punctured arms and the fetid rooms and listened to all the talk about the new generation, I had actually believed that drugs made a difference, that drug users were somehow inherently different from others. What I saw were the kids, Group L. I saw their loneliness and their fear and their happiness and pleasure. I saw Desmond Jencks sitting next to Lana Monroe. I heard him telling me about his ulcers, I knew that story. I listened to Janine telling me about the water fight. I knew that story, I thought of Watson and his wig. That was familiar. I heard Candy Fisher wailing and the strident voice of Agatha Jones. I saw Porter Portman calling Watson and Desmond dingbats. I watched David Abrams packing to leave London and Marina Giocanda at the airport and Taylor Nash's head cocked hearing the church bells and Laura Johnson driving off in her cab. They were all old stories. Rhoda and Susan were telling us about getting lost in London and Leslie Casyk was puzzled by the Tower of London, and Nybia Pagan was asking directions to the Post Office Tower and Therese Montaigne was eating ice cream in a small town in Germany. I'd been there. In front of me Vittoria Palazzo's eyes flashed and Jane smiled like a cow and William threw spitballs on the bus and Tracy Cummings looked coy and Karl Prinz took a drag on a Marlboro and Phyl Gordon asked about the ruined castles and Bobbi Seward stood around silently and I had been to those places as well. I saw Sven Heller at the Changing of the Guard and Erica Cruz leaning over her map of London and Ann Hendricks pushing peas around on her plate and Vanessa leaning on the bar in Avon and Claire and Betty sitting together on the bus talking quietly and Wanda helping Candy back into the hotel.

They were just people like I had always known. That they took drugs — some of them — made it more complicated, but it didn't change them. It didn't turn them into animals, into degenerates, into lepers. Maybe it was just their way of coming to terms with growing up. That didn't mean I had to like it, but it did mean that somehow I could begin to understand it. In their own worlds, who knew what they lived through? I'd grown up. It hadn't been a bed of roses for me either.

I lifted my face from the river and turned to the hotel. Bob was just standing there waiting, watching me, saying nothing. We crossed the bridge and looked at the hotel. Twenty kids were hanging out of the
windows, their faces taut with tension. They were so serious I started laughing all over again. Nothing was that serious.

We walked into a crowd on the landing. I left Bob to tell them the news and walked to one of the kids' rooms and knocked. They said come in. There were five of them in the room, ranging in age from 15 to almost 18. I looked at them. I knew them. I said:

"How many of you take drugs?" I had to know, that was all.

"What do you mean?" I repeated my question. One of them said he didn't. Another said they made him sick so he stopped. Two said they'd tried them. One said he used them all the time, but never on the trip. I looked at him. Of all the kids on the tour I liked him best of all. I searched his face for the signs of ravaged degeneracy. All I saw was a face. Worse than that. All I saw was a nice face. I learned later that he'd lied to me that night, that he had taken stuff on the trip. You could have fooled me. I threw my hands in the air and went up to tell Miss Bloch the news. We all got to sleep late that night. Bob and the kids searched the girl's room. They pulled her bags out and searched them. They were all a bunch of pros. Maybe it was too many cops-and-robbers movies. They sifted through face powder and squeezed tubes and checked the window sills inside and out and felt the seams of her clothes. I looked at her. She was sleeping deeply. Every now and then she'd move in her sleep.

I had to get up at 5:30 the next morning and do the checkout. I went to bed. I also went to sleep.

* * *

After Innsbruck we spent two nights in Venice. After that we spent two nights in Florence. It was more of the same. After that we were on the road to Rome. It seemed we'd been a year in Innsbruck, two in Venice, and ten in Florence. The trip to Rome was forever.
She took hold of my sleeve. "There is just one thing, Walter. I don't mind a little fighting because it is manly. But you mustn't cause a disturbance that would bring the police in, you know. And although you are very big and strong and played right tackle at college, you are a little weak about one thing. Will you promise me not to drink any whiskey?"

"This Eichelberger," I said, "is all the drink I want."

RAYMOND CHANDLER

Pearls Are a Nuisance
One of the things that made the trip to Rome seem forever was the way it started. Peter had pulled the bus around to the side of the hotel. The bellhops had brought down the luggage and I'd counted it and checked labels and Peter had stowed it under the belly of the bus. And then I'd checked my lists again and I was missing a piece. Only one thought scared me more than having Peter unload the luggage: arriving in Rome without Bobbi Seward's bag. I looked at Peter. I looked at the hops. It was only 8:00 in the morning. I'd had three hours of sleep, was full of no coffee and already my collar was fastened to my neck by rivets of sweat.

"Unload it."

Peter got his key out and opened the doors. The hops came up to help him. As the bags hit the ground I pulled out a fresh list. The luggage sparkled in the sun. I hated it. Bobbi Seward's bag was still missing. I gave the room number to one of the hops and he went upstairs to check out her room. We pulled out cigarettes and pulled the acrid smoke into our lungs. It made nothing any cooler. The hop reappeared. No bag. He shrugged his narrow shoulders expressively.

I walked among the bags spread out on the ground. There were over a hundred pieces: floral patterned, leather, plastic, matched pairs with gilt clasps, several boxes. I racked my brains, but there wasn't much left to rack. What did Bobbi's bag look like? Then I saw it. It was right there in front of me shining out like a cafeteria sign. I marked her name off on my list and threw my pen into the air. I never knew where it landed. I could have cared less.

"Load it up," I told Peter. His face was expressionless, but there was tension in the air. I tipped the hops more than I should have and walked around to the front of the hotel to make sure that we were all ready to go. Everyone had been ready for half an hour.

"When are we going, Mr. Wood?" Leslie Casyk croaked. "All the other buses have left already."

"Right away, Leslie," I said. The bus pulled around the corner. Peter got off the bus and stood at the door. No matter what else, he was always polite. He helped the girls up onto the bus and said hello to the boys. I made a final count to make sure we were all aboard and settled into the hottest seat on the bus. The door closed and Peter pulled out into the traffic.

I read the courier manual one last time. I had about three minutes before we made a turn from the road we were on. I dug my crumpled pack of cigarettes out of a pocket and put them on the ledge in
front of me. I folded the map of Italy to the part of the country we were in and raised my head to watch the road. The road widened from two lanes to four. In front of us was a truck. Peter pulled into the left lane to pass it. As he accelerated I saw our turn to the right of the truck, I groaned audibly and gestured to Peter.

"That was our turn," I said.

He continued driving straight ahead. He didn't even look at me. I kept my eyes peeled for a place to turn. We passed a couple.

Sweat broke out along my arms. Under my jacket the shirt clung to me like a dying dog. The road T-ed in front of us forming two narrow lanes.

"Peter! Can you turn here?" He threw the bus into a turn. It was tight. He worked the wheel over. The muscles in his arms bulged beneath his rolled-up sleeves. He grunted. The bus seemed longer than ever. It seemed enormous. Turning it took forever. Oblivious chatter welled up from the kids. Peter made the turn and looked in my direction,

"I can turn! I can go back to Florence too!" He spit the words at me. That was all I needed. To lose my driver. I made a feeble joke. As he made the turn onto the Autostrada del Sole he made a great show of asking me if this was the right turn. His sarcasm was as wide as his shoulders. They were as wide as a beer truck. He might as well have asked;

"You're a courier?" I was asking myself the same question.

Nobody answered.

* * *

That evening we would arrive for our week in Rome. That meant the regular mapping sessions would start all over again. As we left Venice we had collected a map, but in the last ten days that had been the only mapping the kids had done. We figured that it would be a good idea to go over the kids' London maps on this trip, to get them up for the Rome maps. In Florence Bob and I had sorted all the London maps into individual folders. Sometime during this day I was going to sit with each kid and talk over his maps with him. But not yet. I watched the road.

The bus ate up the miles. Smoothly and easily we crept up on and passed everything else that was moving. Peter relaxed. He dug out a cigarette. I lit it for him. Things were back to normal. We were usually on good terms. It was only when I was stupid that I lost him.

I lost him seldom.
A slight breeze stirred through the bus. I got up in the aisle and took off my jacket. I looked back at the bus. There was a lot of sleeping going on. Had Odin still been with us, he would have waked them up. They might miss the scrubby vineyards passing the windows. Then what could they tell their folks next time they opened a bottle of Chianti? What could they tell them if they'd been awake? That they'd seen some scrubby vineyards? I passed over the temptation to wake them up. You'll never know how easy it was. I scanned the bus for boy-girl pairs.

On the gondola ride in Venice all the boys had been paired with girls. On the bus trip from there to our hotel the pairing had stuck. Most of them had stuck the next day and the next. Even Portman had had a mate—Nybia Pagan. Mate may be the wrong word, but you get my point. Now only two of the pairings were left. Taylor Nash still held Joy Gray's hand and Karl Prinz still sat with Erica Cruz. The four of them were sound asleep. David Abrams was sitting with Nybia now. I didn't think it meant a thing. David sat with everyone. The back of the bus was still the back of the bus. Casyk, Johnson and Cummings still made a mess of things, but they had new friends: Fisher and Pierce had joined them. So had Jane Brown and Bobbi Seward. Sven Heller was back there too. They were having a gay old time. Casyk was teasing her hair and Johnson was smoking up a storm. They sang sporadically the Group L song. It was something they'd come up with and something only they would sing. It was corny, but it was theirs. The only thing out of the ordinary about the bus was where Jencks and Watson were sitting. They were sitting in the front of the bus, right behind me. They were sitting there to keep me company. I liked that. It was a nice gesture.

Otherwise it was the same old bus, front, middle and back. Bob and I couldn't get over the cultures that developed in our midst. Neither could the kids. They loved every scientific minute of it. We chatted up the bus cultures with the kids. It didn't make them change their seats but it opened their mouths. They knew what they were up to. David Abrams pointed out that the kids in the back of the bus were the furthest from the guide. He should know. He sat there often enough. Talking it over with the kids brought five bus regions to sight. There was the front and the back. We all agreed on that. But there was also the front-middle, the middle-middle and the rear-middle. To get five regions out of forty-five seats is going some. I went along with them. As they saw it, it was much more than a social function. It had to do with the relation of seats to windows, seats to PA speakers, seats to drafts from holes in the roof. It had to do with passivity and visibility. All concerned agreed that it was a less passive experience to sit in the front. In the back it was like being the tail that the dog wags. The middle of the bus was some sort of pivotal position. Everyone also agreed that you could
Figure 10.0. Bus seating chart, 9:30 a.m., 17 July, on the way from Florence to Assisi.
see more up front—and hear better if anything worth while was being said. The back and back-middle noted that they had more leg room, for comfort—and for stretching out for a summer tour snooze.

How did all this relate to the maps? How did it relate to their being mixers or rangers or fixers? Maybe I could start finding out. I sat down in my seat and reached under it for my sisal fiber book bag. I pulled out a handful of folders and considered what I was going to do. Peter leaned on his horn as we passed another bus. I figured that I had at least three sets of maps I wanted to show each kid. There were the maps I'd drawn of London, the maps Group K had drawn of London, and the maps the kid had drawn of London. Bob and I had decided that it wouldn't do to show kids maps drawn by other kids in Group L, though we really weren't sure why we decided that. Scientific orthodoxy clung to us like wisps of stray fog. I didn't think the sun of Italy would be good for these remnants. That made me happy.

I put the folders under my arm and stood up. I walked back to where Bob was sitting:

"Okay, courier, it's your bus," I said. Bob got up from his seat next to Phyllis Gordon. I put my folders on his seat and went up front with Bob to show him the various manuals and maps. He sat down in the courier's seat as though he'd never sat in any other. We went over the route briefly. It wasn't the simplest route in the world because we weren't going straight to Rome. We were going via Assisi. To see some more churches. We hadn't seen enough churches so far on this trip. We needed to see six or seven thousand more.

Besides that, we couldn't arrive in Rome too early. Had to give them time to make up the beds that the wave in front of us had left this morning. Two hundred and fifty kids in, two hundred and fifty kids out. One thousand dollars, please. This church, that church. Two hundred and fifty kids in, two hundred and fifty kids out. Thank you very much, come again next summer. I went back and sat down next to Phyllis Gordon.

"How are you this morning, Phyllis? Enjoying the trip?"

"Oh, yes, Mr. Wood. Bob makes everything come alive. I'm so glad you're both with us."

"That was a nice discussion of how you'd paint the landscape you gave us a couple of days ago. I meant to talk to you about that." Instead of boring the kids with the history of Medieval Bologna on the way to Florence, we'd broken the cardinal courier rule and turned the bus
mike over to the kids. We had started out by having them simply describe everything they could see outside the window. As usual, the first volunteer had been David. He'd managed to talk for fifteen minutes. Several other kids had followed. Omar Lenz had told us about life as a parable of the sun and tunnels on the road. Erica Cruz had seen the hills as an ice cream sundae. Robert Watson and Phyllis Gordon had told us how they would have painted the landscape. Phyllis sounded like a conventional, but talented, Sunday painter. It was on the order of a revelation.

We chatted for a few minutes about painting and then I set the maps she'd drawn in front of her.

"How do you think you did with London?" I asked. She'd only drawn us two maps in London. She looked at her maps with all the distaste of a cook for a fallen cake.

"I didn't do too well."

"What do you mean by that?" I asked. "I mean, 'well' is a big word. Where do you think you fell down?"

"I didn't include many things on my maps."

"That's one thing..."

"And I don't think that things are in the right places..."

"That's another thing..."

"But at least I put in question marks where I thought I was wrong."

There was a longish pause. I broke the silence with a question: "What about the differences between your first try and your second?"

Phyllis thought about that. "I think my second try is better. There are more things on it. There are less question marks. I knew more...Didn't everybody do better on their second map?"

"Most people did. I want you to look at my maps for a second." I spread them out on her lap. She caught her breath and made a quick gesture with her right hand, as if to catch a map that was falling. None was.
"Those are great maps," she said.

I was proud of them too. I didn't deny what she'd said. "Yeah, but don't forget. I'm a geographer. I'm supposed to be able to do this. And besides, they're not that good. Look, the Thames is all off here, and I haven't included two of the streets on your first map, and I got the Tower way out of line." She looked up at me to see if I was kidding.

"No, I'm not kidding. They are the best maps anybody drew of London, but they're far from perfect. But I want to show you something else. I've got the maps Group K drew for Bob that day. Take a look at them. Here, take a whole bunch. What do you think?" There were over forty maps in the folder. She took her time going through them, like a little child going through an illustrated encyclopedia. She put several aside.

"Well," she said, "most of the maps aren't any better than mine, but these are even better than your's...sort of."

I looked over the maps she had selected. They were gorgeous highly pictoral detailed maps—of the dorms. If I had a ploy, she'd fallen for it.

"Yep," I said, "these are terrific maps, Phyllis. Only I don't think so. Can you figure out why I think your maps are better than these?" She peered at the maps intently. I prodded;

"Bob asked them to do the same thing you were doing: to draw a map of the city. That help?" She looked from me to the maps.

"The only difference I can see is that they mapped only close to the dorm. I tried to do all of London. Is that it?"

"Sure," I shrugged dismissing the K maps. "They mapped the dorm area, maybe even Cartwright Gardens. Their whole map is usually something you show with a dot. You tried to do something harder. Take a look at the few K maps of more than the dorm area." I rustled through the folder and pulled them out. "Look at these. They're terrible. They've got the Thames running North-South. Nobody in our group did anything that stupid. And look at Piccadilly, north of Oxford Street. See what I mean? Whenever they try the whole city, they fall apart. You tried the whole city and did fairly well. And remember what a mess London was anyhow. I'll tell you, Phyllis, I think you did a good job."

"But I can do better," she laughed. She reached down under
her seat and came up with half a Cadbury Bar—Swiss Chocolate with Almonds. We split the half and munched and chatted.

I excused myself and went to the back of the bus. There was an empty seat next to Sven Heller. I looked at my watch. Half an hour. I could never do thirty-one kids at that rate. It was cooler back here and less bright. I decided to keep the set of maps Phyllis had picked out of the K folder with the addition of the failed whole-city attempts. I ditched the rest of the K maps. I turned to Sven:

"How are you this morning, Sven? Enjoying the trip?" Talk about patter. I had my approach down cold with one try. Sven went like Phyllis, Marina went like Sven. Lana went like Marina. Hi. Excuse me. I want to talk about your maps. Do you think you could move to an empty seat for fifteen minutes? Hi. I'm an insurance salesman. Let's go over your portfolio. I felt like I was selling something. Most of the kids I hit before Assisi were interested. Maybe all of them were interested. I couldn't tell with Jane Brown. It was still like talking to a cow. I'd talk, she'd moo. Maybe she heard me. Maybe she wasn't in my universe that day. Agatha Jones didn't want to talk about them at all—bud did. It was uphill work. Somehow I even got a promise from her to draw us a map in Rome. God must have been my co-investigator. Bill Brown thought it was all a joke. He'd suddenly stare off into space and I'd try to see what he was seeing. Then he'd laugh. Mr. Aiken would laugh too. They were a barrel of laughs. Bill got me to look five times. The sixth time I didn't look and just managed to catch a glimpse of the weirdest looking animal outside of a zoo. After that he caught me twice more. Ha. Ha. On the other hand he knew what I wanted and promised to deliver. Claire Mayo and Betty Baker wanted to know how Miss Bloch had done. I showed them. They snickered. They were good girls, but they always tried to sit behind Miss Bloch.

By the time we reached Assisi I'd said "Hi. How are you this morning? Enjoying the trip?" fourteen times. Fourteen times I'd spread out their maps and my maps and the K maps. Fourteen times through the same spiel. I was beginning to think I was a tour leader. I was beginning to think we were in London. I was beginning to think I needed a break.

Assisi grew, first outside the left windows, then directly in front of us. Out of the smooth grey-green plain rose a russet cone etched with narrow streets and crowned by the largest building I'd ever seen. Maybe it just looked large on that hill. As we got closer I saw that it wasn't a single building, but a complex of buildings built helter-skelter on top of each other. Butresses, arches, arcades flung themselves in an ethereal reaching to the sky. The sky hung piercingly bright behind the hill.
The bus climbed a wide street to a knee of the hill and stopped in a large parking lot. Just above us was our restaurant. We had lots of time. I announced the dinner hour and we got off the bus. Bob and I wandered up to the church through narrow cobbled streets. It was warm and brown and old in Assissi—and very lazy. The interior of the church was cool. We looked at the Giotto frescoes. Once they had been worth seeing, but now they were faded and peeling, a shadow of some earlier time. We climbed a back stair and found ourselves in a high inner courtyard where sun and shade gave substance to the building. We stayed there a long time doing nothing. We left by an inner stair and found ourselves in a still more interior courtyard. We weren't supposed to be here so we walked to the far door and popped out in front of the church where we'd started. It was a pleasant surprise. We'd gone up and up and down and around and come home, but I couldn't have told you how it happened. We walked up above the churches and lay in the sun on on a wide wall overlooking the valley. A slight haze lay over the land. Other small hills poked their heads through it in the distance. I wasn't looking at anything real. The whole scene was an apparition made for us by a friendly but powerful magician. The sun seeped into my limbs and warmed me. Life stirred in my blood. Three hours of sleep! I was about to get some more.

"Wake up, Denis," Bob said. "Let's go get a cup of coffee."

I had four cups of strong black espresso in a row on the terrace of one of those restaurants that is always popping up in foreign films, the ones with beautiful people lingering over a half-eaten meal talking about nothing while the camera prowls the background. I was poor, tired and very much alone, but that terrace made me feel like a million dollars. We went down the hill to lunch.

I got the rest of the group seated and looked around for an empty seat. There was none. The head waiter saw me looking and asked if I wasn't the leader of the group. I said I was. He led me to a private room dappled with light and with so many windows that I was more outdoors than in. My place was set. There were flowers on the table and flowers in the windows and the air was sweet and fresh with their perfume. Couriers always get treated like this. For one, if they're not, they might not bring the group back next summer, or next month. For another, couriers are supposed to be sick of their groups after five hours of contact. They want to be alone, I didn't. It made me mad but I was too tired to care. I had soup and pasta and meat and vegetables and desert and cheese and fruit in a little wicker basket with a bow. It could have been great but the food fooled you. The soup was water, the pasta was iron, the vegetables were mush and the meat was stringy. The pastry was soggy, the cheese rancid and the fruit bruised nearly past recognition.
But the basket was cute and the ribbon was fresh. I guess they figured
the new ribbon would take your mind off the old fruit. Anyhow, what
did tourists know?

The whole affair reminded me of an American pop music radio
station: lots of decoration, lots of payola, lots of come-on and hype and
inside: lots of no guts. I paid for thirty-nine meals with a voucher and
we went back to the bus. Omar Lenz was running around delirious. He'd
shot four rolls of film in Assisi and wanted to take the train to Rome and
catch up with us later so he could shoot four more. Mrs. Needham
wanted to go home and be with her family. I knew what she meant.
Assisi was magical. Whatever you had felt on arriving you felt more
strongly with each passing minute. If you were tired, Assisi was lazy.
If you were lonely, Assisi made you homesick. If you were happy,
Assisi made you delirious. Since we all wanted to stay in Assisi for days,
we boarded the bus and headed for Rome.

A summer tour is like that.

That afternoon I tried to do the rest of the kids. I varied my
patter a little. Now I said, "How are you this afternoon? Did you enjoy
Assisi?" Otherwise it was more of the same. But from each kid I
learned something new. I uncovered the mystery of certain line symbols
not in our booklet. I listened to kids explain the strategies they'd used in
mapping. I found out why some of the kids had only drawn two maps. I
learned how they'd felt while drawing them. I learned how they felt about
us, the trip, the project, about Europe and the other kids in the group.
When that afternoon had drawn to a close I'd done my dance for fourteen
more kids. That left three. They were all bright. They were all drawing
good maps. I put my folders under the seat and dozed. Rome, a room
and a shower were only minutes away.

I knew the approach to Rome by heart. It was supposed to be
tricky. At the courier meetings in Innsbruck, Venice and Florence we'd
gone over this route forever. They probably had gone over it in London
too. I went up to the front of the bus and squatted beside Bob. He was
enjoying himself up there. We got off the Autostrada okay, right onto the
Raccordo Annulare. From there we followed the Via Salaria and the
Via Olimpica. The huge dome of St. Peter's floated in the afternoon haze
off to our left. You would know it anywhere. Off to our right we saw one
of our tour buses listing at the curb. We stopped. One of the couriers
had had an accident. Another was apparently lost. We promised to tell
them at the dorms.

We crossed the Via Aurelia and continued straight ahead down
the narrow Via del Casaletto until a sign pointed to our dorms. We left
the road and followed a long shaded driveway to a parking area beside a beautiful modern building. Quiet sprinklers fed water to lawns and little men poked around at flower beds. It looked sumptuous. I got off the bus and got the word. Dinner right away, a general meeting afterwards and the pool was open. Tell your kids. They'll foam at the mouth. They did. We were here.

I had my room assignments all ready, neat pairs as Odin had promised. I wanted to get that out of the way. But no. At the meanest hotel on the trip, that would have been the first thing to do. My manual said it was the first thing you did on arrival in Rome. But no. This was going to be London all over again. The Dorm Organizer was too, too busy making with the gossip and his pipe to deal with the room assignments. As he waved me away with his pipe for the third time, I went downstairs to eat.

If I had thought that the food in Assisi left something to be desired, this left everything to be desired. It was truly comic cuisine. Our dorms in Rome were ordinarily the residences of Mexican monks who come to study here and at the Vatican. The cooks were Mexican. So was a lot of the rest of the help. So the food was Mexican cafeteria with an Italian cast and ingredients. It was also something else. One of the girls behind the counter had a sweatshirt that read "I am a pear."

She was. Maybe they made her wear it to keep your eyes off what they were putting on your plate. Whatever it was I ate mine and all of Phyllis Gordon's. I was beginning a slow burn. I couldn't appreciate the softly rolling country bathed in the red glow of the setting sun that was happening beyond the glass walls. I wanted a shower and a bed.

I went upstairs. Naturally the Dorm Organizer was now looking for me to give me my room assignments. What I was supposed to have done was to stand around with the rest of the couriers and complain sarcastically about my group. Then I was supposed to do the room assignments and then go out to a restaurant with the couriers and complain some more. None of the staff ate in the cafeteria. They knew better. Also, naturally, my pairs of rooms were way off base. I had a fiver and some singles and a few pairs. Not enough to go around. I passed out the numbers and sought the Dorm Organizer.

"What about rooms for Bob and me."

"Well, Denis," he said twirling his cold pipe in his hands, "I've got a special treat for you and Bob. We've got a seventeenth century mansion on our hands just up the hill. You and Bob have a room up there."
He paused significantly.

"Okay," I said. "Hit me."

"Well, we're going to room thirteen young kids up there. Their T-C's will stay here, of course. You'll be looking after them... It's nothing really." It never is anything really with these people. Just a new way to break your back.

"You mean, we won't be staying with our kids at all?" I asked.

"Well, they're right down here. You'll be coming down here often anyhow. There's no shower in your building. You can use mine. The door's always open."

"Why don't you put some of the couriers that aren't studying the kids up there—"

"They don't stay here at all," he said. "They live in a hotel half a mile away." All the answers, always all the answers. I turned my back on him and went to find Bob. We carried our four heavy bags up the long drive to the mansion. A sprinkler with a wide sweep lay across our path. We hopped through it and made the building. It was a mansion all right — a long time ago. Now it was just a mildewy rotting hulk. Inside it smelled of damp and dirt. We found the stairs and climbed them and searched for a room my key would fit. It was a huge room with a wooden wardrobe of the kind they stopped making in the Middle Ages. The beds had iron steads with bulking things on them that passed for mattresses — but just barely. The windows were huge and the porches were lovely in the evening murk, except that you had to work your way through a cloud of mosquitoes to get to them. A bottle of insect repellent on the night stand said things, unpleasant things. Bob rolled his eyes and shook his head. This and the Dorm Organizer's shower, too. We poked our heads into the bathroom, and pulled the back fast.

Then we marched in, livid with anger. A five watt bulb lit the scene. Sodden plaster oozed down the wall. Where it wasn't cracked it was stained. I turned the handles on the sink. A rusty black scum trickled out. I opened the valve all the way. Nothing more happened. We fought the flies away from the toilet and saw what so interested them. Someone had used the toilet — used it a lot. Too bad there was no water to flush it. We let the flies go back to their business. The room stank. Back in the bedroom we stood just long enough to get covered with mosquito bites and, without a word, we picked up our bags and left. We carried our bags down to the bus. I climbed in through a window and got the luggage key and we opened the racks and put our bags inside. Then we
went to find the Dorm Organizer.

He was on the roof of the building with the rest of the tour leaders. He was surrounded by two hundred and fifty kids. He was telling them the rules of life. It was nice on the roof, too high for the bugs, and high enough for a view miles into the dusk. We were surrounded by country. Silhouetted against the pearl of the sky was the most fantastic castle of anyone's dreams. I joined the kids in not listening to his drone. Every now and then I'd catch a word. "No snapping of towels poolside, and no running." Blah-blah. Blah. The kids were chomping at the bit to go swimming. He let them go. We held Group L back and gave them the list of place names for Rome. We wanted them to have that on the sightseeing tour. Bob gave it to them. I lay on my back on a wide wall four floors up and looked into the sky. The stars were so huge they hung flat on my face, vivid, more than real. As I counted the stars darkness came and the stars were without number. My body felt numb but anger kept it awake. Anger throbbed in my veins in time to the music of the stars. We together were a symphony—the Rhapsody of Hate.

We waited for the Dorm Organizer in front of his office. Finally he appeared, accompanied by two T-C's. They were a young couple, pleasant looking. They looked as though if you turned your back, they'd start holding hands. I knew them. We'd met on the bus to the plane back in the States. They were the T-C's for the twelve and thirteen year old kids, the kids that we were going to watch. Someplace deep inside my head a buzzer rang and energy surged through me. I saw the light.

The light was the one in the Dorm Organizer's office. We followed the three of them in. The two of them were mad. I could guess what about. Their faces were serious but open. The husband spoke but the wife was with him every inch of the way. In fact, she was out in front of him. They didn't want to be separated from their kids. The Dorm Organizer suggested they stay in the mansion. They'd seen it and wouldn't stay there to get in out of a blizzard. I chimed in. So did Bob. We mentioned the lack of running water.

The Dorm Organizer looked at us. He twiddled his pipe. He would deal with us later, his look said. Much later. The husband continued. He didn't see the kids spending so much money and having to take a five minute walk to go to the john. He had mentioned money. Pain crossed the face of the Dorm Organizer.

"We had fifteen kids there last week and they loved it. It was like camping out. And they were close to the rest of the group. The alternative is to put them up at a hotel a half-mile away. If we put you
up there, you'll all have to stay there for the week. We have to guarantee a week's booking." He made his face sincere, fatherly. Too bad he was a twenty-five year old bachelor. "Last week we put the kids up at the hotel. They were back here in two nights, begging me, crying right here in this office, to let them stay in the mansion."

"Well our kids don't have much in common with the rest of the group. I don't think they'd mind," the husband said.

"I'm asking you to try it for one night. Just the one night. If you don't like it, then we'll move you tomorrow. But if you like it, we'll all be happier, I can assure you," he did his best to look assuring but just looked stupid.

The couple shrugged. They looked at each other. "Okay," the husband said, "we'll try it for tonight. But they're no beds up there. What do they sleep on?"

"On the cots behind you." We all turned and looked at the aluminum folding things.

"What about sheets and pillows?" the wife asked.

The campus director coughed and fussed with his pipe. "There aren't any," he finally said. He quickly added, "It's part of the camping atmosphere."

The wife turned to him, amazement alive on her face. Amazement turned rapidly to anger and anger to scorn. The Dorm Organizer was an insect so low she could barely see him. Between her teeth she said:

"We're going to the hotel tonight." That was that. I went down with them to their room in the dorm and helped them to get their bags out front. I also helped them out of their room key. Cliff Jaeckel and Bob Watson helped us get our bags from the bus. We had a room. I let my eyes wander around. In front of me was a huge window. It was low and reached to the ceiling. Wooden slats could be lowered over it to keep out the sun and the thousand eyes of the night. Since it was on the ground floor, that so that with the slats raised, it would be easy to pass in and out without using the door. I considered the advantages of that. None struck me. In front of the window was a desk and one entire wall was done up in wooden shelves. A lamp over each bed, a pair of nightstands and two chairs comprised the furniture. To my right were dry roomy closets and to my left was the bathroom. I looked at it. It wasn't the greatest bathroom in
the world. The shower didn't grab you, undress you and scrub your back, but it had clean running water. So did the sink. The toilet flushed. It was heaven.

* * *

Rome was like that all along the line. London began to look like a place of sanity and calm and care compared with Rome. As the tour leaders showed us that their true colors were "don't-bother-me," the kids and the T-C's showed us that their colors were "we're-with-you." On the full day sightseeing of Rome, lots of kids drew maps of their routes on little pieces of paper. Most of them had maps of the city and were following them with care. When we came back to the dorms for lunch I cast an eye at the schedule that had been set up for the week. The first item under Group L caught my eye. It was for today and said:

Dinner: 6:50
Mapping Session: 7:00
Opera Option: 8:15

That's cute I said to myself. Cuter than blue blazes. I copied it off to show Odin if he reappeared. This is real cooperation. Ten minutes for dinner! I snorted audibly. Taylor Nash heard me.

"You don't look too well. What's the matter?" I told him. I told him and Bob and Joy while we ate lunch together. I got madder and madder. When we got back on the bus, I told the whole bus. I was out of patience with the tour leaders. I raked them over the coals. I also told them to ignore the schedule just as we did in London. The mapping session tonight would be from 6:00 to 8:00, whenever they could make it.

That afternoon in the furnace called Rome we saw the catacombs and the Trevi Fountain and the Pantheon. That morning we'd seen the Coliseum, the Forum, the Capitoline, the Spanish Steps and St. Peters. That evening the kids mapped them. Everyone drew us a map: all the kids and all the T-C's. I went over them as they were turned in. They were superb. Everyone had tried, and had tried hard. It didn't mean they knew two hoots about Rome. But at least they'd tried to put what they did know on a piece of paper. Two of our group had been to Rome before: Cliff Jaeckel and Bob Watson. They'd been here last summer when the tour they were on had gone bankrupt stranding them in downtown Rome. Their maps were excellent, but then they'd had plenty of time to get to know the city. The only thing about them I couldn't figure out was why they'd gone the summer tour route a second time. Once burned, twice a fool, I figured.
I slept through the lectures the next morning. All I needed was to hear the staff make a big deal out of the ancient history and the great art. I had a tasteless lunch and spent the afternoon on office duty in the Dorm Organizer's office. We had a new Dorm Organizer and his name was Dino. He was a squat corpulent Italian, and Odin's chief assistant. And from now on, he was ours.

We went to the opera that night. Five bus loads. The unit Director got lost on the west side of the Tiber. It was a joy to watch him jump out of the bus and ask passers-by in pseudo-Italian for the route. Peter and I pointed at him and laughed. The opera was held in the Baths of Caracalla, a huge outdoor amphitheater set among Roman ruins. The bus drivers invited me to go drinking with them. I wanted to. I needed to. But I went in and watched Aida. I sat way up front with the Italian truck drivers and mobile vendors. They knew their opera. They hummed along with every aria and waved their hands and swayed their bodies till the wooden stands nearly toppled over with sheer pleasure. In between acts vendors hawked coffee and brandy and pop-corn and sandwiches in the stands. It was a show beneath the stars. I loved Italy. I loved the life that pervaded every inch of it. I loved Venice. I loved the urchins swearing and the pigeons and the mad clarinetists in the Piazza San Marco. I loved the color of Florence and the long walks along the Arno River. I loved the scrubby vineyards stragling the hills and the dusty green under the white of the sky. I loved the horses on the stage and the way the soprano floated her song out into the softness of the night until it vibrated with the stars and the audience was hushed in sympathy.

And I loved Group L.

But I hated the tour and I hated this experience and I hated the leaders with their ancient cynicism and tired eyes. I saw Ingrid and I saw her coming home from work and taking Homer up to the park for his run and I saw her sitting on the ledge of rocks while the sun set cool in Worcester and I saw my place beside her. A loud blast of trumpets from the stage woke me with a jolt.

It was cool now, too cool. I grabbed a passing vendor and inhaled a coffee with brandy. I tried to listen to the opera but my mind was elsewhere. I got up and annoyed a lot of people by creaking the floorboards as I passed. I walked down from the stands and smelled the flowers on the night air. Out of the bowl of the seats the opera was like a radio on low in the background of my mind.
Bob was waiting up for me. He hadn't gone to the opera. He hadn't had to either. He'd spent the night with the "back of the bus" talking about things. They hadn't gone to the opera either. They wouldn't. Stale culture was not their meat. I understood their point of view. Bob handed me a sheet of closely typed paper. I shed my jacket and my scarf and started to get undressed. I had the paper in one hand and my other arm half-way out of my shirt sleeve and I skimmed the page. Then I put it down carefully and got out of my shirt and read it over again with care.

Beautiful talk tonight—the first I have had with a group before that was so large—in attendance Pierce et al., Erica and Karl, Sven and at times Omar, in which we discussed the whole Innsbruck drug thing. Many things came out about the girl proving herself by being good, Karl and Sven were very relaxed, Tracy Cummings more than anybody. Denis has been in a bad mood lately which through discussion turned out to be because he has to be responsible for the bus nowadays, which through discussion turned to the planning of a pop opera for the Friday project presentation; in which Denis deliberately violates tour leader orders by having bus go right where he was to go left (suggested by Tracy Cummings) and later reads mockingly from the courier manual. The opera, interestingly enough, planned by those who did not go to the opera, is essentially the life of the bus dramatized and surrealized.

"Life Among the L-People"

The Scene: The bus played by chairs with coat racks substituting for the luggage racks. Put bags up there, cameras.

The Cast: The kids sitting wherever they usually sit. Find this out from Ideal Bus Seating Chart. Collect this as soon as possible. (Good ploy for getting the chart.)

Scene 1: Everybody boards the bus, improvising getting on. The back of the bus group
gets on last after everybody else. They are dressed in Pink Pajamas. The bus starts (get tape of the bus sounds).

Scene 2: The back of the bus girls fall asleep after singing the Pink Pajama song in a bedtime style.

Scene 3: They start to dream surrealistically (ask Denis how to implement) about life on the bus. Maybe Desmond could be narrator. Vital to have everybody in the group playing a role. Erica could dream about a cake, and so on.

Scene 4: Into something about the couples on the bus: Erica and Karl; Taylor and Joy. Maybe they are talking to each other in the middle of a very low something official, maybe Denis and I talking low to the group.

Scene 5: Denis being a "courier," switching back and forth with Denis being "Denis."

Scene 6: Omar stopping the bus to take pictures, Leslie saying "Oh how beautiful" in that accent, stuff like that.

Scene 7: Spoof on mapping on the bus, Adjective Checklisting the audience. I'd rather the audience Checklisted the performance. No ending so far. Have to get rest of group together to work on this.

I sat on the edge of the bed tapping the sheets together. Bob had had a great evening. I lit a cigarette and said through the smoke:

"So I've been in a bad mood lately?" I squinted to keep the smoke out of my eyes. Bob said nothing. "I guess I have at that." I took a drag on the cigarette. "The play sounds great. Dino would have a cow if we put it on. It would be all over. If he ever knew that I was reading the courier manual to the kids he'd have a fit." I mocked his voice: "No one, especially never the T C's, especially the students, is
ever to read what is in this book. I mean, when he finds out — whew! Bam! All over."

"We had fun," Bob said.

"That's obvious," I said. "Who would play Odin?"

"Bob Watson."

"Oh, he'd love it." I clapped my hands together. I looked over the stuff he'd written. "Tracy Cummings has a real sense of humor."

"They all do. They all like the opera idea."

"Where did it come from?" I asked.

"Out of the air. I don't remember who first said the word. The back of the bus people are really alive. Candy Fisher has really come out of her shell since getting drunk in Innsbruck and Wanda is a real live wire."

I finished getting undressed and wound the alarm clock. I didn't set it. The next day were more lectures. I needed the sleep more than I needed them. So did Bob. It had been a long day.

Just like every day in Europe.

* * *

The next day dawned bright and early but I didn't see it. I was asleep. The light activated my rods and cones for the first time around ten o'clock. I yawned and rolled over. I pulled up the blind a little and peeked outside. Nothing much seemed to have happened in my absence. The sun was still in the sky. The building hadn't moved. I swung my legs over the edge of the bed and reached for a cigarette. What a way to start a day. I reached up and tossed my crowning glory and smoked silently in the half-dark. I stubbed my butt and padded off to the john to shower and shave and get the body ready to face one more day. It was the 20th of July. I was twenty-six.

I was sitting there on the edge of my bed feeding myself the day's second cigarette wondering when I was going to stop smoking. I was beginning to feel less like a campground of the Mongolian horde and more like myself. Bob came in looking bright and chipper.
"I suppose all the coffee's gone?" I asked.

"Long ago," Bob said.

"I guess I can make it to lunch," I yawned.

"What's on the courier schedule today?" Bob asked.

"Fregene Beach. I hope I don't have to take a bus. I just do not feel like it today. I feel like lying in the sun, except I didn't bring my trunks, except I don't own any to have brung. Strike that last. I don't use words like 'brung.'"

Bob smiled. We were just a couple of kids. Except that we both felt a million years old on this trip. There was a commotion at the window. I'd already pulled the blind all the way up and light streamed into the room. Something else did now too. Something that made me feel a lot younger. Mostly it was the fact that they were there at all, but it was also the smiles on their faces. They had a cake. They had presents. I loved them.

We had a birthday party in the window. I got a card with a map of Europe on it showing all the cities on the tour. Across the map it said: BONNE ANNIVERSAIRE! FELIZ CUMPLEANOS! APPY-HAY BIRTHDAY-BAY! BUON ANNIVERSARIO! Inside it said: NO MATTER WHAT LANGUAGE ONE SAYS IT—THE MEANING IS THE SAME: HAPPY BIRTHDAY! Beneath that were the kids signatures scrawled at different angles. Some had messages: "Confusius say: On birthday everybody one year older," or "Good luck with your book!" or "The greatest map maker there is." Jane had written the last. I couldn't tell if she meant me or her. And that morning I didn't care. There were bottles of soda and five bottles of beer for me with ribbons around their necks and from Joy Gray a finger nail file with the note: "Something to smooth your wrinkles away with." There was even a Group L Flag. We all stood around talking and laughing and there was the obligatory rendition of "Happy Birthday" and the blowing out of the candles and the eating of the cake from paper napkins. I climbed through the window after a while to join them. I opened a beer. It was Italian beer from the vending machine in the main hall. It wasn't something you'd write home about, but it wasn't bad.

After a while the kids started to drift away trailing "Happy Birthdays" behind them like dust blowing over a distant horizon. Sven and Taylor hung around for a while and while the four of us chatted, I had a second beer. It was getting warm. I was fascinated. It tasted better warm. I strolled along the walk that went around the building. An
overhang of the building cast deep shadows over it. Outside, the sunlight was like a wall. In a bay between two buttresses Cliff Jaeckel was giving his kids an extra lecture. Obviously he didn't feel the tour lectures were quite enough. I leaned against a buttress and finished my beer listening to his pleasant voice. He was making a moral point about the art of seeing. Then it was time for lunch. The kids drifted off and Cliff and I chatted. I strolled leisurely back to the room and leaned on the window sill, looking at Bob sitting on his bed smiling at nothing.

"Time for lunch," I said. We went to eat.

As usual we sat with Phyllis and Joy and Taylor and Ann. As usual I ate most of Phyllis' lunch in addition to my own. Not that it was worth eating, but it was all there was. Somebody started talking about Porter Portman and Taylor told us how he made his bed. It seems it took him fifteen minutes and when he was done you could bounce a marble on his blankets. Funny thing was, he wouldn't sit on his own bed after that. Might mess it up.

After lunch I went with Taylor to see Porter's bed. There were five people in the room and it had the smell five people make when they live together in a small space. The blinds were mostly drawn and the light in the room was murky. Porter lay on Taylor's bed reading military model magazines under the bed lamp. A stack of them lay beside him. Sven and Karl and David lay on their own beds, each in its individual disarray. Suitcases were open on the floor, a couple pushed half-way under the beds. An ashtray overflowed on the window sill. Sven was in bed with a bad cold. Karl smoked, staring through the crack left beneath the blind. David read under his lamp, half-dressed.

Outside it was sunny and warm and a breeze moved through the grasses of the grounds. I looked at Porter's bed. It made me think of a painting by Mondrian—all right angles—with colors by Whistler—all grays and whites. The top of the sheet that showed over the blanket looked freshly ironed. So did the pillow case that covered the square pillow. How he took the curves out of that was a mystery. The gray blanket was without wrinkle and the corners where it disappeared under the mattress were perfect squares. I took a quarter from my pocket and dropped it on the bed. It came back to my hand. A sprung steel bed for a sprung steel boy with a sprung steel mind. I sat down on the bed.

Porter lowered his magazine carefully. "You're sitting on my bed," he said.

"So I am," I looked up at him. "It's the only one unoccupied in the room."
"That's because it's the only one made. If these dingbats would make their beds I wouldn't sit on them either. I'm just trying to teach them a lesson."

"Oh? What lesson is that?"

"One they'll learn in the Army if they don't learn it from me."

David put down his book and looked at me. "You should have heard what he was saying last night..." That tore it. The fight commenced. It was morals and loyalty and obedience-but-to-what for fifteen minutes. Porter at least provided them with something to talk about. I looked at my watch and hustled up to the courier meeting. I stopped on the way to ease a beer out of the vending machine. Nice vending machine. I patted it. They should put these in student unions in America. Make a fortune.

The meeting was short and snappy. Only enough kids for two bus loads had signed up for Fregene Beach. Two couriers wanted to go. I'd been on office duty yesterday, so this afternoon was free. So was this evening. Dino kept looking at his watch. Finally he muttered something nasty and said:

"We were supposed to go over the route for the Capri field trip this afternoon but Marco has not arrived. We'll have to do it this evening. Another meeting, then, at 7:30." We all groaned, but mine was real. Out in the hallway as I headed to my room I heard the piercing voice of Vittoria Palazzo. That reminded me to pick up another beer. I did.

Bob and I spent the afternoon catching up on our notes about the kids, about the trip, about the social organization and mapping progress. All the kids were out in the world. Omar and Bill were riding around on a scooter taking pictures. Cliff and Taylor and Joy were out trying to buy a guitar for Taylor. Betty Baker, Claire Mayo, Miss Bloch and some others were at the beach. Giocanda and Monroe were sunbathing in the interior courtyard. Jencks and Watson were probably out shopping for clothes. Johnson was probably hanging around the office waiting for a call from the boyfriend she'd picked up in England. The rest were out somewhere. Anywhere. Out. We sat in our room and made lists and drank beer. Sun streamed through the open window. The hall door was propped open and a brisk breeze moved through the room. It was a lazy quiet afternoon. The only sound was the sound of the machine giving up its beer. We did a lot of work.

About 5:00 we were working on one of our subgroups. It consisted of four kids who moved as pairs, as though connected by bonds
of flesh. Betty Baker and Claire Mayo were one pair. Rhoda Noyes and
Susan Lincoln were the other. We figured that they buffered each other
against the environment, their pairness building a wall that kept the
outside at a comfortable distance. Suddenly the room was darkened and
we looked up. Betty and Claire stood in the window, watching us write.

"What are you doing?" Claire asked.

"As a matter of fact, we're writing about you." I smiled and
worked on my bottle of beer.

"You'll get drunk if you drink like that," she said.

"I haven't been drunk in a year and a half," I said. I laughed.
"Of course I haven't been drinking for a year and a half either. Do you
think I'm drunk?"

"You don't sound it." Pause. "Can we read what you're
writing?"

Bob and I looked at each other. It was a moment frozen in
time as clear as distilled water. It was a decision we should have argued
about for months. Instead we said together, "Sure." I gave them the
forms. They traded forms and read some more.

"I don't have a fat face," Betty said. I shrugged. Claire
looked at her with something like a smile on her face. Her hair was wet
and her smile was cute.

Claire said: "You say, 'What do you talk about with Betty?'
You just don't know her. She talks all the time. She does blush a lot
though. Don't mind us, you're mostly right about everything you say."

Just then Susan Lincoln and Rhoda Noyes appeared at the
window.

"Whatcha doing?" Rhoda asked.

"Reading what Bob and Denis wrote about us," Claire said.

"Oh! Can we read ours too?" Rhoda asked. I didn't even
have to search for them. They were right there in front of me. They
both read with care, a pink glow spreading gradually across Rhoda's face.
Susan just smiled quietly to herself. Tremors in her long back said she
was laughing, but not out loud. Rhoda looked up.
"I am a tease," she looked at Bob. "But I don't bite." She climbed in through the window and sat down on Bob's bed. The six of us talked for half an hour, maybe longer. It was our first real contact with this quartet. We tried to guess what Susan wanted to be. I said a nurse, Bob said a doctor. She said a librarian, and smiling, maybe a physical therapist. Betty said she wanted to be a Phys. Ed. teacher with a minor in history. Both she and Claire go to a girls' school.

In our notes we'd called them shy:

"We're experienced, you know," Claire said.

I raised my eyebrows. "What do you mean by that?"

Betty looked at me. "Not that! I mean we both dare to go down dark alleys."

Rhoda said, "We should be keeping notes about you."

"Yeah?" I said. We didn't fall out of our seats, but we joggled. That would be data!

"What would you say about us?" Bob asked.

"I'd say that I hate it when Denis lets his glasses fall down his nose. So do Vanessa and Janine." She laughed. Susan smiled. I lifted a beer bottle to my lips. It was empty. So was I. It was time for dinner. Bob and Rhoda and I walked down together. I stopped at the vending machine to spend a little money. I had some supper with my beer.

After that things got hazier and hazier and more and more golden, the golden haze of alcohol. I went to the courier meeting with a bottle in my hand. Then I went to the Piper Club Discoteque with the group. Bob and I and Taylor and Joy and a T-C from another group sat at a table and watched the lights. Everybody danced but me. I drank beer. I drank beer until I got the 1500 Lira bill for the first round. That made me mad. I went to the bar and started drinking rum. That was cheaper than beer at the table. Cliff Jaeckel was there with me. I was drunk. I pounded on the bar for service. The noise and the heat inside got to me and I went out into the night. I lay down beside a fountain in the street and looked at the sky. I fondled the paving stones. Nice paving stones. Nice street. I patted the street. I walked into a joint and bought four huge cans of beer and sat beside the fountain drinking them. I shouted to the sky:

"You can't do this to me!" and I threw a full can of beer up
into the night. The beer poured from the opening in a gold arc. That was funny. I started laughing and my laugh ran around the empty square like the patter of rat feet in garbage cans. I heard that sound and hated it. I kicked viciously at another can of beer. It rattled off into the street skidding and skittering like my stomach. I fell to my knees and pounded on the street.

"I HATE YOU I HATE YOU I HATE YOU I HATE YOU." Tears fell off my face and mixed with the blood from my torn hand. I vomited. Lunch and dinner and beer and rum gushed on the street. Green bile glinted meanly. I retched till my stomach and throat were raw and then I retched some more. I crawled on my hands and knees to the fountain and hung over the side like a drowned dog. I cursed long and silently. This is what it comes to in the end: a sick body alone on an empty street. Thoughts came and went in the rooms of my mind like prospective tenants. None stayed long enough to talk to. It wasn't nice up there. The thoughts fled. I stood up and wiped at my face with my hand. I missed my own face. I took my right hand with my left and reached into a pocket for my handkerchief. I pulled it out carefully and slowly. I never did anything more difficult. Still holding my own hand I wiped my face and pushed at my hair. I looked down the street to the discoteque. I dropped my handkerchief on the street.

Thought deserted me entirely. My mind took a vacation. My body didn't. It went right on without its mind.

*       *       *

I sat up sharply and grabbed the alarm clock. Ten-thirty. Ten-thirty when? I pulled the blinds slightly and saw daylight outside. The light hurt my eyes and I dropped the blinds. The sides of my stomach hurt and my throat was raw as though I'd smoked too many cigarettes. I lay back in bed and considered the situation.

Ten-thirty!? The Pope! I jumped up. That was a dumb move. My head whirled. I sat back down and it began to come back to me. I looked at Bob's bed. He was gone but a note was pinned to his pillow. I got up carefully and walked across to his bed. The note said: "Gone to Castelo Gondolfo. Will tell you what happened when I get back." Suddenly I felt very sick, not body-sick, mind-sick. I was afraid. "Will tell you what happened." The words held menace. What happened. That meant something happened. What? I reached for a cigarette. I drew the smoke into my lungs and tried to remember but I remembered nothing. I smoked in silence. Nothing stirred outside my room. The dorms seemed deserted. By the time I'd washed and dressed I was feeling better. My head no longer bothered me. I cracked the blinds. The light
was nice. I raised them and fresh air entered the room. I gulped it
down. Old no hang-over kid. That's one of the worthless virtues. You
only know you're it after you get drunk. Things like that aren't worth
too much.

A knock sounded on the door. Someone besides me was alive.

"Denisio? Would you like some lunch?"

"I'll be with you in a minute," I shouted.

"I'll be in the office.

I smoked another cigarette quickly, then headed to the office.

Dino was pushing papers around. "We have to go out to eat.
I'll be ready in a second." He didn't look at me. He didn't look at me
once we were in the car. He didn't say anything either. His eyes were
hidden behind dark glasses. We sat down on opposite sides of a table
outside beneath an arbor. It was a nice restaurant. The guys across
from us were mixing wine and Coke. My stomach churned. Dino ordered
for both of us.

"Wine?" he asked looking at me for the first time.

"No thanks," I said. He put his napkin in his lap and gazed
at me across the table.

"Well, Denisio, what happened?"

"What happened?" I asked.

"You don't remember?"

"I don't remember."

"Well," he said, "you got drunk. Very drunk. You made a
spectacle of yourself in front of the entire unit.

"What happened, Dino?"

"You got drunk and made a spectacle of yourself in front of the
entire unit.

"Yeah, but what happened?"
"You'll have to ask Bob that."

"Well, if you won't tell me what happened, maybe you'll tell me what happens." He paused while the waiter placed soup in front of us. He watched me to see if I could eat it. I did.

"Denisio, I have decided, and I hope you will go along with me. You are leaving for Paris as soon as possible. There you will wait for the group to catch up with you. We will put you in a hotel. You will have no contact with the kids or T-C's. You cannot be seen by any member of the group again. When they come to Paris you will rejoin them. We will be putting Group L into a separate dorm. We could send you straight home, but you are doing so good work that I think you should finish the Project." He stopped and looked at me. "But the entire unit is watching me. They will want to know what the leader is doing about it when a courier is breaking the rules. I am sending you away."

I looked at him. I struggled to remember what had happened to cause so severe an excommunication. "Dino, please, tell me what happened."

"I told you already. That is enough for me," He sighed. "Nobody told me you were a drunk."

"I'm not," I said. "I just can't drink. Whenever I do, I drink too much. For a year and a half I've had nothing to drink at all."

"And why last night?"

I looked at my hands. "I don't know why last night," I said softly.

"You were speaking often of your wife," he said just as soft. "This is a hard job. Being a courier is almost impossible. To be running a special project too, is too much. They should have never asked you to be a courier. Maybe next year you will come with us again and your wife will come too. Maybe next year you will not be getting drunk."

He smiled. I smiled back. Inside I knew one thing. There would be no next year with a summer tour. Dino drove me back to the dorms.

"Stay inside your room," was his parting comment.

I headed down the halls to my room. Bob Watson appeared in the door to his room. He waved me into the room and said, "How you
"feeling?" He moved some clothes off the bed and gestured me to sit down. So I wasn't a leper.

"What happened last night, Bob?" I asked.

"Nothing," His voice was flat.

"What do you mean?"

"Well, I didn't even know you were drunk until you came up on the stage to dance with Marina. You're not a bad dancer. But you fell down, and I helped you up and it was obvious you were drunk. You went and sat down but you kept on wanting to dance. Bob wouldn't let you. Then we all left. Cliff and Bob and I helped you onto the bus. I don't think anyone else knew you were drunk. Bob and I hustled you around back, but somebody, I think it was the Unit Director, had already told Dino. He found Bob but he never saw you. You wanted to go out and talk about Ingrid and we walked you up by the mansion and you puked a lot. You slugged me," He smiled ruefully.

"I'm sorry," I said. I'm always sorry later. "Who else knew I was drunk?"

"Well, Des knew, and then Taylor, Sven, Karl and David. Porter knew too. You were singing some crazy Spanish song about palm trees growing and Puerto Rico."

Yeah. I'd been there before. Always sing "Guantanamera" when you're drunk. It's a rule.

"Dino says I made a spectacle of myself in front of the entire wave. You sure that's all that knew? He's sending me off to Paris tonight or tomorrow."

"The -- he is. I ought to know. I don't think any of our T-C's except Cliff know and most of the girls don't. No one from another group knows. He's stupid."

"Yea, but he's Dino. Why aren't you on the bus?"

"You should ask? I was up all night with you."

"Ah --, I am sorry, Bob."

"Don't be. You were funny." He paused, "Taylor was up too. He didn't go to see the Pope either. He's in his room. Go ask him."
I did. The room was dim. Sven was lying in bed sleeping with his arms across his eyes. His cold was so bad he hadn't gone to see the Pope either. I sat on the edge of the bed and bummed a Kool.

We talked quietly, not to wake Sven. I got the same story here that I'd gotten from Watson: I'd babbled, talked about my wife, and sung some crazy Spanish song. After a while I asked to see the new guitar that he'd bought yesterday. It was as lovely as a baby's complexion and just as smooth. I did the only thing I can do with a guitar — picked out the first seven notes to "Fly Me To The Moon." Taylor took the guitar lightly out of my hands. He looked over to Sven. Sven's eyes looked out from under his arm.

"Go ahead. You play sweet," he said. Taylor ran his fingers lightly over the strings. He wasn't one of these guys who can play five chords and thinks that's guitar. He could play. He wandered through some sounds that fit together without ever being anything you knew. Then very softly he began to sing:

"Though your brother's bound and gagged,
And they've chained him to a chair,
Won't you please come to Chicago just to sing;
In a land that's known as free,
How can such a thing be fair
Won't you please come to Chicago,
For the help that we can bring...

We can change the world,
Rearrange the world,
It's dying—
If you believe in justice,
It's dying—
If you believe in freedom.
It's dying.
Let a man live his own life.
It's dying.
Rules and regulations, who needs them?
Oh, throw them out the door..."

"What's that?" I asked when he'd stopped.

"It's a Graham Nash song I heard on the radio."

"So why'd you play it for me, Taylor?"

"'Cause it's about sometiong you believe in: a world without
rules and regulations. He makes it sound nice."

"But you don't believe him?"

"I'm thinking about it." He played quietly until the buses hit the parking lot outside. I sat up quickly when I heard them.

"I'd better go." I got off my back and turned to the door.

Taylor said, "You need a new pair of shoes."

"I know it. But I can't afford a pair just now."

"I've got two. Take one of mine. I've been wearing these sneakers since the trip began. Take my others." He pulled them out of the closet and tossed them on the floor. They were leather bootlets. I looked at him. He meant it. I took mine off and put his on. They fit. I smiled:

"Thanks," and then I left the room.

* * *

Bob had nothing new to tell me except one thing: Dino wanted me to run the map session that night and explain the situation to the group. Then Dino thought he might show up and answer unanswered questions. That was fine with me. I walked down to the map room with the pencils and the Environmental A's and the map blanks and tracing paper. The map room was as empty as my stomach. I stood in the door of the map room and looked at the cafeteria. A burning desire to eat there consumed me. Just then Taylor and Joy came into sight. I called gently to them and they came over.

"How's for bringing me my dinner in here?" I asked.

"Okay," Taylor said. Joy smiled at me and I smiled back.

I sat down behind the desk in the room. The late afternoon sun was falling softly through the windows onto the floor. I walked over to the window smoking and looked into the kitchen across the way. The chatter of cooking was low and soothing and filled with the aroma of home. I turned as Taylor came into the room with my dinner on a tray:

"Breakfast is served," he said as he put the tray on the desk with a flourish. I started eating. As I ate the group began to pile into
the room. Soon I was eating to an audience of over thirty. I'd never
done that before. The sensation was odd. Thirty pairs of eyes watched
my fork go from my plate to my mouth. I put on my best manners and
ate with care. By the time I'd finished most of Group K was in the room
too. I wiped my mouth daintily and getting out a cigarette, sat casually
on the front edge of the desk.

"Dr. Beck will be taking Group K to do the maps in another
room. Before you go, however, I wonder if I might ask you a question?"
I paused to allow someone to say no. No one did. "How many of you are
aware that I was thoroughly and totally drunk last night?"

One T-C raised her hand — the one that had been sitting at
our table. I nodded and thanked them and Bob took them away. I turned
to Group L:

"How many of you were aware that I was drunk last night?"
Thirteen kids raised their hands. Only one T-C, Cliff Jaekel. Miss
Bloch said she knew something was up from the way the kids acted this
morning, but she had no idea. Mrs. Needham had no idea at all.

"Well, because I made a spectacle of myself in front of the
entire wave last night, Dino is sending me to Paris tomorrow—" I never
finished that sentence. There were cries of protest, angry noises,
sounds of dismay and chagrin. There was a great confusion of shoutings
and no sense. Courses of action were discussed. I was asked to leave
the room. I did. I sat out in the hallway, against the vending machine
that sold beer. I rubbed my hand on the smooth enamel surface. It
wasn't the machine's fault. It was all mine. Bob reappeared and
disappeared into the room. The volume of noise grew. Dino appeared
and entered the room.

The man came to refill the beer machine. He had his little
boy with him. They smiled and chattered and looked at me. I must have
looked like I just lost my best friend, because he offered me a free beer.
I thanked him but said no thanks. Long red rays of light crawled along
the tiled floor of the hall in a vain attempt to hold onto the day. I looked
along them into the sun. It sat on the edge of the world, bigger than an
orange. The day was ending. So was the trip, the project and my
chances at a dissertation. I stood up and dropped a coin into the Coke
machine. With the Coke cold in my hand I walked into the cafeteria, into
the light of the setting sun. In the back of the room a group of kids were
banging music out of an old piano, singing and laughing. The room was
exploding with the color of the setting sun. I walked to a table by the
glass wall. I walked and I walked and I walked to the table hearing that
music and watching the sun swell in size. It was a scene from a movie,
shot with a telephoto lens in Super Panavision with stereophonic sound and in slow motion. In the movie Bridget Bardot would be waiting for me at the table, waiting to make it all up. In real life no one was waiting for me at the table. I pulled out a chair and sat down watching the sun set.

"Well, I guess you're leaving." It was a funny voice mixed of some undefined sadness and a lot of glee. I looked up. It was Porter Portman. He was having trouble meeting my eyes. After the trip was all over he wrote me a letter to tell me how he was the one who'd run to Dino with the news that I was drunk, and the news that he'd always hated me. I didn't know that then. All I knew was he was having trouble meeting my eyes. He had nothing else to say and left. I turned back to the sun. Only half of it remained above the horizon.

"Well, I guess you're leaving." It was a funny voice mixed with some undefined sadness and a great deal of righteous satisfaction. I looked up. It was Agatha Jones. She had trouble meeting my eyes. I guess she saw the devil reflected in them and didn't like what she saw. I sighed and turned back to the window. The vultures are always the first to feast on dead meat. Long after, when just the bones are left, the cavalry arrives to raise a quiet grave. In my mind I saw John Wayne walking among the ruins of a smoldering home, stooping to pick up a doll.

"He wouldn't listen." It was Phyllis Gordon. Nybia and Joy and Taylor and Watson and Vittoria and Marina and Lana and Janine followed. They looked dejected, as though their best had been in vain. It was a little Chicago all over again. All the faces were red in the light of the setting sun. And then the fingers of red slid off the tables and down from the walls and the sun dropped into another world and Phyllis said:

"Why don't we have a vigil? We can carry candles and sit in Dino's office." That appealed to Watson, Taylor and Nybia.

I left and went to bed to lie down and give my head a rest. Bob came in to the room to say they were having a vigil and the group would assemble on the roof in half an hour. I looked at the clock. It seemed a long time from now. I climbed through the window and leaned in at Betty and Claire's. They were talking about me. They turned and looked at me:

"We just want you to know we're on your side. But we're not going to the vigil. We think that Dino has made up his mind and that it will just make things worse." Claire added defiantly: "And it's not because we're afraid of Miss Bloch."
"I never thought it was," I said. It was growing dark and I could barely see them in the shadows of the room. I turned and walked on. "We're on your side," came floating at my back through the darkness. It was the same story for Susan and Rhoda. We're on your side.

I took my time getting to the roof. It was dark and most of Group L was already there along with lots of kids from other groups too. What had been a private drunk was now unit politics. Bob and Cliff were in the center of the crowd discussing punishment versus salvation. Every now and then Vittoria's voice would pierce the blackness reminding us of the drug episode in Innsbruck. "She stayed once she promised to behave. Why can't Denis?"

I sighed and lit a cigarette. The crowd opened and I was sitting in the center of it. The smoke hung like a curtain before me. "What am I supposed to say? That I'm sorry? Well, I'm sorry, but not about what happened last night. I'm sorry that I can't say that I'm sorry. Being sorry is a waste of time. Last night happened, I can still feel it in my sides where they ache from vomiting. I hurt. I know better than anyone that it happened. It happened for a lot of reasons, reasons buried in my past and reasons like I'm tired and worn out." I paused. I drew on my cigarette.

"I don't think that I have to tell you that I don't believe in rules and regulations. If you've been on my bus then you know that I've broken most of the rules already. I haven't played the tour tapes if you didn't want to hear them; I've let you use the mike; I've read the courier manual to you; we stopped for sick kids when we weren't supposed to; now I've gone and gotten drunk and I wasn't supposed to do that either. I didn't hurt anyone except myself. Even if I had, it doesn't help to send me away now. How would that help? Afraid I might do it again? Any one of you might do the same thing or worse. I think I should be allowed to stay and finish what I started."

Someone said "Right on!" but Cliff Jaeckel escalated: "And if you'd murdered someone...I suppose you should too."

"Nobody murdered anybody, Cliff. Why try to make it something it wasn't? You think every time somebody crosses the line—your line—you've got to punish them?"

"But if you don't punish people, things'll just keep on getting worse."

"What are you afraid of, Cliff? That if there wasn't punishment lurking around the corner, that you'd run off and kill someone?"
"I might," His voice was as solid as his chin. You'd need a chisel to make a dent in either.

"Well, have a little trust in others if you can't trust yourself. The way of the rule hasn't worked for two thousand years—"

"You're reaching for the stars, Denis—"

"You're damn right I'm reaching for the stars," I shouted, "and the day I stop reaching for the stars is the day I'll go out and get drunk permanently! What kind of life are you living where you're not trying to do the impossible? That's not life! That's security and it stinks—"

"Calm down, Denis." Bob's hand was on my arm and it pulled it out of the sky. He went on: "The question is a simple one. Do we agree that Denis ought to stay and that Dino ought to be given a chance to change his mind?"

There was a chorus of yeses and we went downstairs and stood around in front of Dino's dark office. It was the night of the T-C party up at the mansion. Dino was up there smiling and pouring drinks and being polite. Cliff appeared out of the darkness. He had a Coke for me and said he'd go up and get Dino.

Dino came wearing a slightly deferential smile left over from the T-C party, but under that his face was strained. It was the color of bread dough and had the texture of course sandpaper. As he came striding down the hall he looked around him. He didn't like what he saw. He came up to where Bob and I were standing and spoke.

"I am very disappointed that you Denisio, and you too Roberto, are not growing up into the situation." His eyes traveled around the group. "And the rest of Group L as well."

We moved to a lounge decorated with pictures of the Pope. The kids sat holding their white pillows on sofas of red leather, on the yellow carpet, on cushions scattered around. The first thing Dino did was to make sure that the kids from the other groups knew that they couldn't talk. This was a Group L matter. I wanted to point out to him that once it was a matter for Denis Wood. It was the kids' fight though. I sat in the background. It was kind of hard to figure Dino. This meeting wasn't on his schedule and seemed to annoy him the way aborted meetings annoyed him—more than just about anything. Yet as he settled into the simple moral arguments dear to what he called his heart, he was having a ball. It was Miltonic. The summer tour was the Universe and Dino was its God.
The Courier Manual was his Word and his Word was with us. In fact, it was all over us. I was Satan and the Kids were Fallen Angels. At first Dino was the Fatherly God, trying to convert and save the fallen with infallible wisdom and advice—wisdom and advice potent enough to affect even them. It affected them the same way an aspirin tablet effects a heart-attack victim. Every five minutes Vittoria Pallazo would say:

"But I don't see why this is any different from what happened in Innsbruck. And you gave her a second chance. Why can't Denis have a second chance?" Vittoria's voice was the kind that shatters glass. It shattered Dino. He'd look at her and say:

"Because Denis is not any longer a fifteen year old girl." Each time he'd say it someone would snicker:

"And I hope he never was." Dino's face would blotch and his eyes would search for the offender, darting about the room through the cloud of cigarette smoke hanging around his face.

You could time your watch by it. Vittoria's voice would rise and Dino would flinch. He just got more and more polite.

"Because, Miss Pallazo, Denis is not any longer being a fifteen year old girl." Each time he lost a little more control of his English. After an hour of this Dino understood that reason wouldn't buy a ham sandwich that night. He fell back hard on his position of power. His final remarks had effect, but endeared him to the group with all the attachment of a scorpion:

"I am very sorry to have to be taking this position, but it is obvious that you are not listening to reason. I am so far being very patient with you all—for Denis' sake—but now I am not being any more patient. If this meeting is continuing for one more minute I will be changing my mind about allowing Denis to rejoin Group L in Paris and instead will be sending him home to the States tomorrow."

The audience was over.

It was all over. The group would be leaving for Capri in a few hours, at 4:00 A.M. to be exact. We gave the bus seating chart blanks to Taylor and Janine. At 3:30 we went out and hung around the buses. There was something in the air as though the unit was about to embark on a Mission Impossible. Leaving at night is like that; there's an element of excitement and high enterprise that disappears in the light of the sun. The parking lot was dark except for the light from the buses that fell wanly on the asphalt. I stood at the door of the bus and said good-bye to the kids.
as they got on. The light came through the door of the bus casting deep shadows on their faces as they turned to me. Some of the girls approached slowly, as if afraid to say good-bye, quickly kissed me on the cheek, then hurried aboard.

"See you in Paris," said Wanda Pierce, "This is worse than saying good-bye to my boyfriend." In her hurry to get on, she tripped on the steps. She looked back at me, her face in shadow, her hair highlighted, glinting with metallic specks in the yellow light.

"See you in Paris," she whispered.

After everyone was aboard I got on and used the mike for the last time. I had a lot I wanted to say. A hush settled on the group like leaves dropping in the fall. I said:

"Bye-bye. See you in Paris."

Bob and I sat on the bumper of a bus that was staying behind and waved as the bus passed us. Faces were pressed against the windows, hands cupped to the glass against interior reflections. The lights snapped out and we watched the red tail-lights vanish around the curve in the driveway. We followed the sound of the buses to the road and the low growl as they picked up speed and headed away. Then we heard the sound of insects in the night. Ashes from my cigarette sparkled redly as they scattered on the ground. We got up and went to bed.

That night I left for Paris.
"Henry!" she cried in a very strange voice. "But I thought—Come over here at once, Walter Gage, and tell me—"

"I have whiskey on my breath, Ellen."

"Darling! I'm sure you needed it. Come at once."

...RAYMOND CHANDLER
Pearls Are a Nuisance
I spent three days easily in Paris. My aunt and uncle were there that summer and I stayed with them. Time passed like a fast express. I barely saw it disappear. The city was all the songs had said it would be. I saw it my way, at my pace, on foot. I arrived in Paris as tense as a verb in a subjunctive clause. Three days later I was as relaxed as a banana peel. But while I was letting Paris put me back together, things were happening in Rome.

The Capri trip took twenty hours. For those twenty hours Janine and Taylor with the assistance of Nybia and Therese Montaigne collected five bus seating charts. The kids jump around that bus as though they had St. Vitus' dance. No one sat in the same seat on two consecutive charts. If we didn't have other sources of information, the charts alone would tell us what was happening that day. It was gossip time and rearrangement time, time to shuffle the power around within the group. The kids avoided sitting with Cliff Jaeckel like the plague. They sat with Mrs. Needham though, and they felt for Mrs. Needham, especially when the courier left her behind in Naples. That was a smooth move on his part, about as important for group solidarity as it was when Odin left Bob behind in London. The scenery was there and everybody saw it, but it was way down on the list of things to use the mind on. The kids were using their mind on one thing — what to do for Denis.

They got home at midnight that day, just about the same time that I was climbing into bed in Paris. The next morning they saw the Sistine Chapel and then that afternoon was free, free to get ready to leave Rome the next morning, free to work on the project for presentation on the roof of the dorm that evening. Group L assembled in the map room to draw their third map of Rome and afterwards sat around considering what to present as a project. There was no question that they were going to do something. They'd been caught with their pants down in London and had still come in third. Now they could plan. Now they had something to say. Nobody remembers who was the first to suggest the pop opera that the back of the bus had planned with Bob the night everyone else had gone to Aida. But it was suggested. The back of the bus had talked up the idea with a lot of the kids, but some of them still weren't familiar with it. The kids that had planned it - Wanda Pierce, Candy Fisher, Tracy Cummings, Erica Cruz, Karl Prinz, Vittoria Palazzo and maybe a few others - ran through it for the group as a whole. Most of the kids loved it.

All the kids knew it was dynamite. It was clearly the strangled voice of the kids raising itself in protest. It was a political demonstration. It was the vigil recast as art. But its political significance was lost on
Figure 11.0. Bus seating chart, compiled by Taylor Nash, Janine Eber, Nybia Pagan, at 6:00 p.m., 22 July, on the way to dinner stop beyond Naples. Mrs. Needham has been left behind in Naples at this point.
none of the kids. And the kids that had avoided the vigil refused to take part in the play. No one remembers exactly who these kids were, but Rhoda Noyes, Susan Lincoln, Betty Baker, Claire Mayo, Agatha Jones and Porter Portman did not take active roles. They hung around for the planning, they kibitzed, they laughed, they heckled, but they took no role. Well, no role in the play. Porter Portman was playing a role. He was playing military spy, living out his war and espionage fantasies. He was constantly leaving the room, running off to tell the T-C's and the tour leaders what Group L was up to. It was a deadly serious role he was playing and if he hadn't smashed a chair by sitting on it, the group would never have burst out laughing at him collectively.

By 4:00 planning was over and the kids were running through the play. It was different from what had been planned earlier. It had been brought up-to-date to include the latest developments in the life of Group L. The beginning remained the same. Chairs were set up to mimic the arrangement of the seats on a bus and the kids got on pretending they were boarding the bus in the morning. The last of the kids to board were the back of the bus kids. They wore pink pajamas. There was a lot of discussion about that decision, but the point was clear: the back of the bus did a lot of sleeping on the tour. They decided that a little strip act wouldn't hurt matters, and the details of that were worked out. They decided to wear clothes under their pajamas, to enter the bus, to sing their "Pink Pajama Song," to strip hunkering down as they did so and to fall asleep. It became obvious that the play needed a narrator, and the natural leader among the kids — Desmond Jencks, the leader of the London skit — took this role. His ambivalence about the play was enormous and he took the role of Narrator, not because he believed in what the play was saying, but because he was the leader of Group L. Three other kids had roles: Bob Watson played Odin and Dino, Karl Prinz played Bob Beck and Taylor Nash played Denis Wood.

Entrances became complex. After the back of the bus sang their song and did their strip, Watson/Odin got on the bus and played courier. Then Taylor/Wood was made courier, Watson/Odin exiting in his courier role to reappear later as Watson/Dino, Dorm Organizer, campus director, reboard the bus, and throw Taylor/Wood off. Bob was stage manager and play coordinator, and with the kids worked out the final script. By the time people started leaving the map room for dinner, they'd run through the play three times.

The mood during dinner was apprehensive. Doubts ran like echoes around the dining hall. Desmond continually doubted whether he should go through with his role. Many of the kids questioned whether they should put on the play at all. They answered their own questions: "We've
got to go through with it." Therese Montaigne came up to Bob with her worries. Bob shrugged. She shrugged and smiled. "There's no other way I guess."

The projects were presented on the roof of the dorms in the same place that the general meeting had taken place on the first night. The stage was the corner of the roof pointing out into the rolling countryside, yellow now in the setting sun. The castle floated behind stage center, its buttresses and minarets silhouetted against the golden sky. The evening cool crept to the roof on cat's paws. The audience sat on the concrete of the roof or leaned against the wall of the inner courtyard. Sooner or later most of the kids in the unit would be on stage. Nerves were scattered around like penny firecrackers. Group L was wound as tight as an alarm clock ready to wake up the world. Three groups went on before Group L. They were the usual. Better than bad, they were received by the audience as such things are. The T-C's applauded the efforts, the kids applauded the guts, but no one applauded the projects. The sun was making a big fuss turning off the day. The sky had gone purple, then red, then gold all over again. By the time Group L had set up the chairs it was just light — pure and liquid, without bravura.

The bus was arranged with its back to the corner of the roof, its front heading into the audience. To the left of the bus almost behind the audience stood Group L, waiting to go on. Behind them stood the T-C's and the kids who weren't playing, a tight, scared little knot. The Play began. Bob held the kids back as a group, letting them dribble realistically onto the bus in twos and threes. There was the usual talk:

"When are we leaving?" in Vittoria's voice. Therese and Phylis boarded together. They sat down on the left, Phylis in front of Therese. She turned around in her seat. Therese said:

"Will you please turn around. I can't see." The audience chuckled slightly. They'd been there. There was more small talk, a lot mumbled. When most of the kids had boarded, the back of the bus hustled on. They wore pajamas and carried pillows. That created a stir. The audience laughed. They settled down on the bus. All the kids that were playing kids were on.

But where were they sitting? It's the sixty-four dollar question. No one thought to take a Play Bus Seating Chart. Memories are funny. Long after the trip was over Janine collected charts from as many kids as remembered anything. Tracy Cummings wrote her: "All I remember from the skit is the back seat. It was Leslie Casyk, Candy Fisher, me, Wanda Pierce and Laura Johnson. Don't know if this'll help. Hope so!"
Leslie Casyk remembered the same people in the back in a different order. She also remembered that Karl and Erica sat in the row one up on the left. Nybia Pagan also remembers the same back of the bus and agrees with Leslie about Karl and Erica. She puts Joy Gray in front of Erica, Janine across from Joy and herself in front of Janine. Svén, according to her, sat in front of Tracy Cummings on the right. She adds: "Yes, Desmond was standing but Bob Watson sat down once or twice in front of me. Phylis was somewhere in the front on the left side — alone. David was there, though where I know not. Sorry, I don't know where Taylor was — I know he was in front." Janine's memories are similar. So are Bob's. No one else remembers where they sat. As Leslie said: "It was a horrible night." Most people tried to forget it. No one quite did.

* * *

With the back of the bus on, the Play begins in earnest. They sing their song and pick up some more laughs. As it ends they begin to take off their pajamas and fall asleep. The Courier boards the bus. It is Watson playing Odin. He counts the kids and scolds the back of the bus, reading from the courier manual. He is very critical. The Narrator changes the day and Taylor/Denis boards the bus as Courier, replacing Watson/ Odin. It is his birthday and the bus sings "Happy Birthday" to him. The Narrator announces that Denis is twenty-six. The bus chants "Twenty-six, twenty-six, twenty-six, twenty-six," over and over again while Watson/Dino reboards the bus, this time as Dorm Organizer. Over the chant Watson/Dino tells Taylor/Denis he should be responsible, that he is twenty-six, not fifteen. "You're twenty-six not fifteen, twenty-six not fifteen, twenty-six not fifteen," he repeats over and over again, climaxing with:

"GET OFF THE BUS DENIS AND GO TO PARIS." He points accusingly at Taylor/Denis and the chanting stops. Silence falls like a stone down a well. Taylor/Denis stands and with lowered head walks off the bus. Beyond the roof, night has fallen — now the stage is dark. A circle of light from a flashlight falls on Taylor/Denis sitting on a chair, dejected, head down, alone. A guitar sits in his lap. From the darkness comes the voice of the Narrator:

"In Paris, alone, a young man waits for his friends." Taylor/Denis picks up the guitar and starts to sing softly into the night:

...Somehow people must be free,
I hope the day comes soon.
Won't you please come to Chicago.
Show your face —
From the bottom of the oceans,
To the mountains of the moon.
Won't you please come to Chicago,
No one can take your place.

We can change the world,
Rearrange the world,
It's dying —
If you believe in justice.
It's dying —
If you believe in freedom.
It's dying.
Let a man live his own life.
It's dying.
Rules and regulations, who needs them?
Throw them out the door.

Rules and regulations, who needs them?
Throw them out the door.

There is a silence at the end of the song, heavy enough to carve.
Watson/Dino walks into the cone of light.

"Denis," he says, "it was the principle that counted." Taylor/
Denis and Watson/Dino shake hands, coolly, as though neither wanted to.
The light clicks out. The Play is over.

*    *    *

For a moment the audience sat there holding its breath, silent,
still. Then part of it began applauding, loudly and longly and enthusiastically.
None was adult. They were all kids awed by the daring and filled
with admiration for a group that had gone a lot farther than they had nerve
to. The adults, the T-C's and the tour leaders, sat there, immobile,
some stunned, some livid with rage. Someone flicked on the roof lights
but the kids kept applauding. A couple were even crying.

Then another group was on the stage. The chairs were gone,
the bus had flown away, Group L's turn was over. The next act was good
and, by following immediately after the Play, took some of the heat out of
the air. Then it was over and the applause came and went and the Unit
broke for Cokes and snacks and dancing. The last group would go on
afterwards. Group L moved as two units, players and non-players, to the
refreshments. As Bob drank a Coke kids came up to him with reports:
"The kids really liked it," and "the T-C's think it was a slap," and things
like that. In the background the voice of George Aiken was raised saying to somebody, "We've got a problem here, got a problem here." The music and dancing continued until the last group presented its project. It was terrific and served to push the Play even farther from the center of attention, deeper into memory. Afterwards there was more dancing, but Bob didn't hang around. He and Taylor went down from the roof and walked out into the world. They walked for a long time in the blackness of the night talking, of the end of the project, of its continuation, of the Play, of the kids, of themselves and their feelings. They walked for a couple of miles and walked off the tension and walked into resolution. They walked back to the dorm and split for their rooms.

Bob had a lot of visitors that night, mostly kids. Nybia came, worried about the outcome of the night, about the future of the project, about the chances I had to get my degree. Bob Watson and Janine Eber came with the same worries, the same fears. Taylor came by and they all talked. Bob knew he'd had it and stressed the importance of continuing the research, of completing what had been started, of finding the end to allow the beginning to live. They all wanted to help carry out the project, finish the research.

Then the Unit Director showed up to tell Bob that a meeting was in progress in Dino's office, that Bob should be there. He was candid — the Unit Director was always candid — about the meeting. The T-C's from Group L wanted Bob sent away, wanted the project to end. Bob wasn't surprised. No one was surprised. This was the last act of the Play all had been waiting for.

The Unit Director hadn't been entirely candid. All the T-C's weren't there. Jill Needham was missing. She'd received a knock on her door and had opened it to Miss Bloch, Mr. Aiken and Lenz. They were boiling. Denis and now Bob — they both were perverting the kids, the trip, destroying their education. Miss Bloch was loudest. The louder she got, the more inflammatory her accusations, the less Jill listened and the hotter she got beneath the collar. She finally told the three of them that she would have no part in the hatcheting of Bob and asked them to leave her room. They insisted. She insisted. They wouldn't leave without her, they needed a united front. She screamed for them to leave...and they left. They went to Dino and presented their case. They never had more sympathetic ears. Dino not only agreed, but surpassed them. He revealed the truth. Not only did Bob use the kids as puppets, he used Denis as a puppet. They united their voices in a paean of hate, and sent the Unit Director for Bob.

Bob came. The T-C's were ranged around the room. Flora
Aiken had crawled from her brother's space and stood on her own. Anger fired her. Her eyes bristled. Her voice was high, taut, sour. George was inflated with importance, like a tin knight on false crusade. Cliff's jaw was slung a mile in front of him, adamant, rigid, like the Old Man of the Mountains. You could have chiseled graffiti on it and he wouldn't have noticed. The three of them were vocal. Miss Bloch sat in the background, arms crossed, several chins flat against her chest. She was beyond words. She was watching justice. Omar was silent too, and still. Only his Adam's Apple moved, rapidly up and down in his throat, like a mouse beneath the blankets. Dino glared and mostly listened.

Their argument was simple. Both of us, but especially Bob, were interfering with the tour study program. We were interfering with the kids education. We were interfering with their education. Of course that had been our role all along. All we'd done was teach them how to map, and ask them to be alert to their environment, encourage them to relive their experiences on paper, to code them symbolically, to be awake to the stereotypes they were making of the peoples and landscapes they saw, to understand and think about the things they did, the sub-cultures they were part of, the roles they played within the group, to discuss the landscapes they were seeing on the bus over the PA system with the whole group, from any point of view, from their particular vision. All we'd done was ask them to integrate what they were seeing and what they were hearing and what they were learning with what they were, into themselves with self-awareness. All we'd done was ask them to stay awake, not only to the passing scene, but to themselves, and to replicate this awareness in as many ways as possible. I guess what scared the leaders and the T-C's about the Play was the awareness the kids had shown, the awareness of the fact that in Dino's decisions was a subtle deadly attitude towards life that went beyond Denis and Group L and reached all the way across the ocean to the world of politics in Chicago and back again to Group L on a roof in Rome and Denis alone in Paris, an awareness of the connections between things that the leaders and the T-C's hid from themselves and wanted hidden from the kids. There was no question that we had interfered with the kids' education, with education seen as the pouring of needless facts into unwilling bottle-mouths, with education seen as a process of filling and regurgitation and nothing more.

Bob couldn't deny that we'd interfered with their education. He could deny our irresponsibility, his irresponsibility. He turned on Lenz and asked him what he'd done while shooting a million pictures to further the kids' education. Lenz swallowed his Adam's Apple and had no answer. He turned to the Aikens and asked them what they'd done. They too had no answer. He turned to Miss Bloch and asked her.
"I watch out for them," she said. "And they're not my puppets." Bob didn't ask Cliff. Cliff did do things, did care. They went back and forth and back and forth and accusations filled the room like cigar smoke. But it didn't matter. Dino had made up his mind. Bob was to go. The project was over. My dissertation was as dead as last year's rose.

When the buses pulled away from the dorms the next morning for the last time, Bob wasn't on the one that counted. He wasn't on any bus. He'd said his good-byes the night before. He was in bed sleeping. That night he flew to Paris. It was all over. Somewhere on a radio Carole King was singing:

Stayed in bed this morning just to pass the time,  
There's something wrong here there can be no denying, 
One of us is changing, or maybe we just stopped trying, 
And it's too late, baby, now it's too late, 
Though we really did try to make it. 
Something inside has died and I can't hide, 
And I just can't fake it. 
Oh no, oh no, oh no.

So Bob arrived in Paris — the same night Group L arrived Milan. Bob took a room in the same hotel in which I had a room, but of course I was still staying with my aunt and uncle. I was placidly seeing Paris while Bob was anxiously stuffing my hotel box with notes, trying to get in touch with me. Project Group L was in pieces, scattered over Europe. It would make a funny movie. If it wouldn't make a funny movie, it would make a great tragedy.

The next day I wandered over to the Paris dorms to set up a room for the Paris mapping sessions. After all, the group was arriving in Paris the next day. No one was in the office, but there was a letter waiting for me. It read:

24 July 1971

Dear Bob and Denis,

Phylis, Janine and I are going to try to attempt to continue your project. We are taking the bus seating charts and I am taking notes concerning the group. About half of the bus agrees to do the maps. We will have them draw one of Lucerne and three of Paris,
Please leave a list of the names of places in Paris for the maps. If you can think of anything else let us know. Leave the above in Paris for us.

Denis, we hope you are not angry at us. We didn't expect things to turn out this way.

Please leave an address where we can mail (the bus is moving) these things to you when we arrive home in the U.S.A. If you think there is a possibility we won't get your mail in Paris leave it under the name of Oscar Lozano — he is studying in Europe. I know him.

Nybia

Of course the letter was Greek to me, but I got the point. Somehow, for some reason, Bob was no longer with Group L. That was interesting. I wondered why, and where in blue blazes he was? I hung around the Paris office waiting for the Dorm Organizer to materialize and exercise my ears. After a while he showed up. This one played with a pipe too. He dragged himself into the office with that consequentially tired look the leaders loved and poured himself into his chair behind a massive desk. That put me on the other side of the room from him, the way he liked it.

"Denis! What are you doing here?" he said around his pipe.

"I thought we could talk about a room assignment for the Paris mapping sessions."

He removed the pipe from his mouth and examined it closely, like an agricultural inspector looking for bugs. Without looking up he said; "Didn't Bob tell you? The project is over!"

"How could Bob tell me? He's in Lucerne."

"No, he's staying at your hotel. He arrived the night before last."

"So how come he's not with the kids?"

"You'll have to ask Bob."

"Why can't you tell me?"
"I wasn't there."

"Where?"

"Ask Bob!"

"Will you cut the cloak-and-dagger jazz and tell me what happened?" He looked along the stem of his pipe as though lining up a gun sight: "I wouldn't tell you the time of day," he said.

"Okay hot-shot. I guess that all means you don't know from yesterday what's going on." I picked up my letter.

"See you soon," he said meaningfully.

"Never will be too soon for me," I said. I left. I went to my hotel and dug the thousand notes from my box. They were all from Bob. They said things like "Where are you? I'm in the room above you," and "I'll wait up till 1:00 for you. Got to talk." I guessed so. He wasn't in his room now. I waited for him. He showed up soon and we talked. We talked that night and the next day and the next night and the next day until he left for England to take care of some business. We also talked to the Dorm Organizer again, and then again. From the leaders' point of view, the project was over and I was to return to the States a week early — to make sure I didn't contact Group L again. They had an ace up their sleeve: I would return a week early, or I would pay my own way home. I thumbed my nose at their plane ticket. They didn't like that. Of course they couldn't understand it either: imagine — spending money, to sustain my soul. Since their soul was money, I was hard to figure.

"Well," said the Dorm Organizer when he saw he couldn't bribe me, "of course you can stay in Paris. I don't own the city. But you can keep away from the kids if you know what's good for you."

"What's good for me?" I asked.

"Staying out of jail for one thing." My whole body shook thinking of that. I could hear the charge now: ruining the morals of the young by having them draw maps of Paris.

"And for another thing?"

The Dorm Organizer got serious and fatherly: "I don't like to say this, Denis, because you know that despite what's happened, the entire tour staff thinks very highly of you. But if you cause us any further grief,
well, I guess somehow this whole story will get back to your school, to your department chairman. Your chances of getting the degree will disappear like," and he paused to concentrate, "like snow in July." He was about to go on, to paint a gruesome picture of my academic demise, but I stopped him:

"Mr. Dorm Organizer," I said, "if the Ph.D. from the Graduate School of Geography at Clark University is capable of being withheld on grounds as petty as that, well I guess the degree isn't much worth having anyhow. But I think you're a fool, a little miserable, sniveling fool. Maybe your remarks sum up the value of your degree, but at Clark it's based on a little more than some story a sorehead comes in with."

"Like what?" he asked.

"Like good, hard, original work," I said. I turned and left his office.

So Bob went to England and I played cops-and-robbers with the tour leaders, seeing the kids, getting the maps, carrying out the project. It didn't go smoothly. It wasn't fun. For the kids doing the work, it was something else. I wasn't with the group, so I can hardly say. But the kids know. Let them tell the story.

Nybia Pagan kept notes from the time the bus left Rome. (I haven't edited them much. I haven't wanted to.)

24 July, 1971

Bus quiet until 8:55 when Peter broke the ice with a few cracks over the mike and everyone went back (almost, not quite) to normal. Ann and Agatha were playing cards and others were talking, even the Pink PJ's started talking. Some disoriented according to bus seating chart. Example: Janine sat in back with PJ's. Vittoria, Sven, Candy, Mrs. Needham, Omar and Rhoda were asleep.

Courier relatively well received. Some hostilities between people. Courier gave a speech over mike after we were ten minutes on the road. Said he wanted to remain neutral, that he did not know
anything about Group L until yesterday, that he
was told the basic facts and wanted to know nothing
else. He hoped we understood but if not to at least
respect his wishes and not to speak to him about
the incident for he was aware of our strong feelings.

Appears to be a good courier — brought along his own
tapes (classical). Everyone (most everyone) clapped
when he mentioned the tapes, even when he said they
were classical.

Dino gave a speech before we departed. He said he
(although we might not believe him, said he) cared
for Group L and would be watching out for us. He
said he "knew" some of us understood and hoped
that the rest of us would understand some day. He
said that last night he had had a meeting with the
T-C's and it was agreed that it would be best if the
project was dropped because it was interfering with
our study program.

11 a.m. PJ's, Janine and Vittoria were singing
"Baa Baa Black Sheep," "Where Have All the Black
Sheep Gone," "Power to the People," et cetera.
Miss Bloch was with her usual clique and you should
have seen the looks the PJ's and company were getting.
The T-C's seem to be against Mrs. Needham because
she didn't side with them. The uncooperative ones
concerning the mapping tend to sit toward the front of
the bus and the others toward the back of the bus (with
a few exceptions, of course). Taylor and Joy have
separated so it seems. She is now staying with
Bob Watson and he with Desmond.

5:45 p.m. All silent in back; in front everyone play­ful among themselves. The courier is very nice but
Denis was more entertaining.

10:55 p.m. It seems as if the ice is breaking. Phylis
received a rather cold shoulder in the morning, but
found people friendlier in the afternoon. Cliff gave
Watson, Janine and me a talk tonight. He brought up
the same old story about our being puppets. He
believes that he gives us "freedom to breathe" but
that you "teach us not to breathe." He said; we
sometimes succeed in things and sometimes fail but the ones we fail in are the ones we learn from most. He said we should think about the consequences not only now, but for the future. He said he understood our loyalty but still felt that we were being manipulated and when we convinced him that we knew what we were doing and had not been led into it, he asked us what we would get from it. We said we wanted the project to be completed in order to see the results; that we also wanted you to write your book; that the maps had helped us tremendously; et cetera. Cliff's General Attitude was: that we are mature and capable enough to make our own decisions but...decide for yourselves as long as you do it his way. He said that because we are carrying out the project, that the tour leaders might send us home, phone our parents, or give us a lecture and that the leaders would deal with it as a group matter so we might be dealt with harshly. We spoke with Watson afterwards who felt the project should continue. We are going to anyway, no matter what anyone tells us. Desmond is all mixed up about the whole thing. We told Cliff that the Play could be taken two ways: as expressing our emotions or as malice. He prefers to take it as malice. Tracy Cummings, Candy and Janine were wearing black arm-bands all day. Watson didn't because the Aikens and Cliff lectured him not to cause any trouble. Mrs Bloch had Vittoria on her blacklist. Omar is still spying on Watson and Janine.

25 July 1971

Omar is still watching. He was listening to our conversation this morning during breakfast. Cliff, I believe, is also watching. Taylor and Joy were sitting next to each other again, but it is not the same as before. They don't know what to say to each other hence they are back together but apart at the same time. At 9:00 all is quiet. Phylis and I were having a spit-ball fight. Everyone seems to be friendly. Omar even greeted us this morning although he is still spying on us. I wish Cliff would move from the back of the bus. I know he is there to watch our every move, because every time I turn around he is watching. Janine and I are both trying to be as inconspicuous as possible. But Leslie
Figure 11.1  Bus seating chart compiled by Janine Eber and Nybia Pagan, early morning, 24 July, between Milan and Lake Lugano.
(leave it to Leslie) asked us out loud if she could help us with the bus seating charts. (She saw us doing them yesterday. Janine was sitting in the back of the bus; she was in a rebellious mood.) Janine and I are going to try to be as friendly as possible with everyone. This way they won't interfere with the project. Janine thought it would be impossible to be friendly with everyone but she is finding it easy. I knew I wouldn't have any problems — being friendly, that is. 11:00 a.m. Taylor and Joy are playing cards. Might be a start to their former relationship. The bus seems more active. For some reason or other the courier won't play any tapes. Tracy Cummings and Candy are disgusted with Leslie. They don't want to room with her or associate with her. They say she is too immature. She seems to be floating, trying to find someone to hang onto again. Taylor appears to be becoming a chain smoker. Desmond started to smoke the night of the Play. He bought a pipe and tobacco but didn't like it and gave it to Taylor. Cliff hasn't spoken to Mrs. Needham. Omar is the only one friendly to her. The others speak to her, but she senses a coldness.

26 July 1971

Everything is back to normal. Everyone is friendly. Miss Bloch is the only one who isn't. She talked to us on Mt. Pilatus, telling us we could not face reality. She is talking to T-C's in other groups too, because I heard her telling them that we could not face reality. Desmond would not draw a map of Lucerne because he said you would need 30 people to map to carry out decent research. Desmond and Joy were holding hands today, therefore I don't think there is a chance that Taylor and Joy will get back together. Desmond is also seeing a girl from another group. So is Taylor. Mrs. Needham says the T-C's are still giving her the cold shoulder except for Mr. Lenz. We are having the girls do the maps in my room and the boys in Karl's room. I gave him the paper and pencils around 5:00. At 8:30 Paul came up and told me that they were missing. He is rooming with Sven, Bill, and Porter. Sven is doing maps for us. Bill is neutral. Therefore I believe
that Porter took them. He is the type to do such a thing.

27 July 1971

We got up at 6:00 this morning. At 7:00 the bus is quiet, only a few conversations here and there. At 9:00 most people are asleep or resting. Everything normal but the T-C's are still being observant — all except Mrs. Needham. She is on our side, Miss Bloch is waiting I believe to catch us with the maps. Yesterday evening she went for a stroll with Leslie and Leslie said: "I'm so glad we don't have to do the maps anymore," Miss Bloch answered: "Aren't there three people trying to get you to do the maps?" Leslie told her with a straight face that she didn't know anything about that. Disagreeable as she is, I can't dislike Miss Bloch because she is only human and we all have our faults. She is a strict person. I hadn't realized it until this trip. (These mountain curves make writing difficult.) 11:30 a.m. The PJ's started singing their song. Omar led the bus in singing "Alouette" and other French songs. Only the front of the bus participated. The back was singing their own songs. Noon, Omar started playing folk songs and the whole bus joined in. After about five minutes or so, Taylor took over. Desmond has been smoking the pipe he had given Taylor all day.

28 July 1971

Desmond was trying to break Janine down. He was trying to convince Janine to give up the project. He said he could tell anyone what was going on "any minute he pleased."

Not only are Omar and Cliff spying on us, but Desmond has joined them. We are being watched from all sides. Today at lunch a student who works for the tour sat at our table to listen in. I recognized him so he didn't get very far. The Dorm Organizer and the courier had a two hour talk with Taylor this evening, trying to find out where you are living. They threatened to send Taylor home if he sees you again. They said he could see you only one more time to tell you about it. What they actually want to do is to
follow him to see where you're living. Mrs. Needham said that the Unit Director had a meeting with the T-C's yesterday about us. They believe that Bob is getting in touch with us each night and was breaking the group up. They thought that both of you were in Paris, but Taylor told them that Bob was in England during their talk. They believed him. They believe that you are a bad influence on us. They also told Taylor that the project wasn't worth the paper it was written on.

29 July 1971

Leslie Casyk, Tracy Cummings and Candy will not be doing any maps here in Paris. It seems as if the T-C's are trying to keep us so busy that we cannot continue the project.

30 July 1971

In the morning when Erica and David were doing maps for us in front of the dorm, the Unit Director from the first Unit (I'll call him Blackbeard since I don't know his name), walked out of his way to see what we were doing. Erica started playing with a cat to throw him off the track. He stood staring at the bottom of the steps at nothing. Omar purposefully walked by us a couple of times two. The Dorm Organizer seemed to get nervous everytime Janine and I stared at him during his lecture. Miss Bloch, Lenz, the Aikens and company went to the Louvre after lunch and purposefully left Mrs. Needham behind. When she bumped into them at the Louvre, they acted catty. Omar, the only one who was her friend, seems to have been turned against her by Miss Bloch. Miss Bloch collected everyone's mail today except Karl's. Laura Johnson has been dating quite frequently an English guy she met in England. Desmond is seeing a girl from the Chirpy-Chirpy-Cheep Group.

31 July 1971

Candy, Tracy and Joy are not sure if they will do the maps. The courier had a talk with them yesterday after they spoke with you. Desmond does not want to draw maps. He said that after his talk with you
yesterday he realizes that he owes you nothing. He has stopped smoking. He says that he has smoked only two packs (not to mention the tobacco) since the 7th grade. He's having lollipops instead. He says the entire project is "getting to be funny." The PJ's were singing their song at lunch for about five minutes. Desmond's comment about them: "They're perturbed." When we were walking toward the restaurant for lunch Desmond, who was walking on the sidewalk, said: "I'm gonna walk in the gutter. Maybe I'll be hit by a car." He seems to be trying to communicate with Janine. Sven seemed to be taking an "I'll do the maps if I have time" attitude. Therefore I was trying to persuade him to do one tonight. In the meantime, the Unit Director came along and stood beside us. We walked away because I had enough on my hands trying to persuade Sven but I think he wants to talk to Janine and me. Sven told Janine that he, Sven, was "like Denis: people raise a fuss, he doesn't get involved, and then sits back and enjoys it all." He doesn't like to be nagged, therefore I'll just have to wait and see if he does them.

Bus was normal today. Leslie did several silly things such as falling under the seat in front of her while sleeping and getting stuck in the steps at the back of the bus while searching for something. Don't ask me how she does these things, she just does. The back of the bus — Taylor, Watson, Bill, Leslie, Tracy and Candy — were singing songs and fooling around throughout the evening. Jane was singing songs by herself. Quite a few kids have started smoking. Bill has been smoking — he says he usually smokes for a while then stops and starts again. He has been doing this for six months. Jane smoked tonight on the bus — the first time I ever saw her. Vanessa has also been smoking. She smokes only when offered a cigarette. (I'm not sure if she is smoking because she was given a pack or if she bought it herself.)

1 August 1971

Miss Bloch was taking down the names of the people
who are loyal to the tour leaders. She gave them to the Unit Director. Phylis says she just wrote down Watson, Taylor, and Janine and me. They wanted the names in order to watch out for us because they are afraid we will start trouble. Phylis says she doesn't know what kind of trouble they could expect from us. They forced Desmond and Taylor to go on the field trip. They wanted us to go on the field trip so that we couldn't see you. The Unit Director called out the names three or four times yesterday to make sure everyone was there. That's the first time they ever did that! Now Cliff is the only person who greets Mrs. Needham. He told us that different opinions should have nothing to do with friendliness.

2 August 1971

Miss Bloch said she knew I wasn't faithful (?) to the T-C's. Before the lecture she was talking to the Dorm Organizer about last night. Joy overheard bits and pieces of this conversation. She said that Bloch was "worried" because we were seeing you. He told Bloch that the project was over. He said that there was nothing they could do to stop us from seeing you. Afterwards the Dorm Organizer asked Watson and Taylor if they had been seeing you. After they answered negatively, he said it didn't matter anymore since they could not send them home since they were leaving on Tuesday. Watson said that the Dorm Organizer was "pissed off."

Not only Nybia was keeping notes at this time. Janine Eber was also keeping a notebook and a journal. No one ever has, and no one ever will, according to Janine, see her journal. But she was nice enough to hand over a collection of notes from this phase of the trip that she had taken for me. For the next couple of pages, the extracts will be identified as being authored by Nybia or Janine, as the case may be.

2 August 1971 - Janine Eber

It is 2:00 a.m. I've just gone to my room, after starting for it at 10:30 or so. (When we got home from our picnic, cafe-sitting, with you.) Well, I heard stuff going on in Tracy's and Candy's room, so I went in. Three other
girls were in there from another group. Candy was 
out sound asleep. Tracy came up to me and said: 
"I want to see Denis so bad." They wanted to find 
out where he was, but I couldn't tell them. It seemed 
rather strange until I smelled her breath. Turns out 
that Taylor and Watson had Tracy and Candy and I 
think (at least they ended up there) Leslie and Wanda 
get some rum and et cetera and then they went up to 
Watson's room to drink all this stuff. Cliff caught 
them and took the girls out. The T-C's on guard 
duty had to drag Tracy and Candy up to their room. 
The girls said they wouldn't go until they could see 
Denis, so the T-C's told them he was upstairs...Well, 
Fisher was very upset and drunk. Watson beat her up 
'cos she wanted to talk and he didn't. Tracy is very 
happy and drunk, Said she cried a lot. Leslie was 
okey, eyes glazed and sick twice. Wanted to know if 
I would cover for her, if they were in trouble et cetera 
...Wanda insisted that everyone in our wing (PJ gang) 
hated her, so she slept in Vittoria's room. She is 
drunk too. Finally things settled down.

Talked to Susan, Claire, a bit to Joy and Betty. Said 
they weren't with Miss Bloch, that she was with them. 
"Look, everybody hates her — she's got no one." 
(she's right!) Said we (Nybia — who they can't stand 
— and me) were awful. They said they tried to be nice 
to us but no response. That's just not true. I always 
said "Hi!" and tried to talk to them. But not too hard, 
'cos of Bloch.

Told 'em a lot of stuff — nothing really important. 
They can go and tell Bloch for all it would do her. 
Joy said Bloch said nothing on the subject though she 
knew Nybia could never be trusted (or loyal or some­
thing to that effect). Joy said seeing Denis was like 
seeing a long lost friend...

Vanessa just got in. I think she's had a bit to drink. 
Was with Harry Silver or something like that again. 
He was the MC at the Group K skit in Rome. He's 
only fifteen! I thought (at times) he was a T-C!! 
She said she had a good time. Was in their room and 
they were running their U.S. Flag socks up a flagpole 
thing they had. They weren't drunk, were they? Well,
I'm still not in bed and it's 2:45. Hope to get some sleep tonight! Vanessa's doing her essay for the tour study program now. I'm not about to do them. What a farce! I'd probably not be able to find anything nice to say to them. Actually got Joy, Claire and maybe Betty and Rhoda to do at least a map and if I get them on the plane or late today, I can get two or three from each of them! Wow!

3 August 1971 - Nybia Pagan

Sven, Karl and Leslie Casyk were drunk last night. David was slightly tipsy. Last night after the party some of the kids were sitting on the steps in front of the dorms and the Unit Director made them go upstairs — it was only 10:30. Before the Party, Karl wasn't feeling well, hence Erica went to see him. On her way out of the boy's wing she passed Miss Bloch who was there. Miss Bloch gave her a dirty look when she saw her. (I wonder what Miss Bloch was doing in there herself?) The courier ignored us this morning as usual but he waved to us as the bus departed. The Unit Director was friendly as usual. Porter Portman was smoking a cigar in the bus. Lana was smoking a cigarette (Taylor was giving her smoking lessons). David and Taylor were also smoking. Except for Taylor (he smoked several) they all smoked one cigarette and Porter one cigar. The back of the bus was singing songs.

I spoke to the Dorm Organizer this morning at the airport to ask him if Bob would be on the plane with us. He asked me if I was aware of what he had done. I told him I knew what was going on. He told me he was concerned for the both of you, that he has known you for six months and Bob for a year. He told me he was trying to prevent this from getting back to Clark. He was afraid that both your jobs were in jeopardy. He said what you had done might prevent you from ever practicing geography. He said Bob might be able to get away with it. (I hope this is clear but the nun sitting next to me is driving me crazy, talking to me constantly, God, I wish she'd shut up!) Most of the kids were crying on the plane.
Among them were Janine, Leslie, Vittoria and Erica. Karl and Sven were very sad.

3 August 1971 - Janine Eber

Decided to take a poll entitled: "What is the first thing you will do when you get home?" I will also ask if they took the tour exam.

Janine: Go to the refrigerator and drink all the orange juice there is! No exam.

Vanessa: Shout "I'm home," and then go up to my room and sleep. Took exam, written around 2:30-3:30 a.m.

Nybia: See my dog, and talk to everyone. No exam taken.

Phylis: Fight my cat off, talk, then "I'm tired" or "I'm hungry." No exam.

Erica: Wetson's! Took exam: "I'll need that credit."


Taylor: See my chick. No exam.

Tracy: See her boyfriend. Took exam.

Leslie: Run to hospital. See Johnny. No exam.

Candy: Go to Wooster and get something to eat. No exam.

Laura: Go see her horsey. Took exam and got an A. ("ha-ha!"")

David: Go to sleep, go out to dinner (he's staying in New York with his parents). Took exam.

Wanda: Go get a pizza, but first sneak in and get some sleep, and listen to the radio. No exam - "Don't need it."
Lana: Go to the beach, give Douglas a big kiss and get a pair of pants. Took exam.

Vittoria: Eat, eat, eat, work; give Roger the biggest kiss if he's there. Took exam.

Aikens: We don't know.

Agatha: Unpack, figure out when I can see Mark. No exam.

Marina: Open my suitcase and give my parents their gifts.

Denis: Found out last night that Betty and Claire aren't split up in rooms with Susan and Rhoda as I thought. They're rooming as before.

6 August 1971 (After the trip was over. DW)

Vanessa never came home the last night. Said she was with Harry and his roommates. Leslie had been crying since the night of the party. Says she'll never see anyone again. On the plane we were all crying. Erica, Karl and Sven sat in the back row of the plane. I had gone back there to pick up the last maps. Claire, Marina and David were there too. Erica kept saying, "Don't start me crying again." That's why she didn't do a last map. But we all started to cry — Erica, me, Leslie — while the guys sat there and laughed at us. Everybody kept saying not to be sad, we'll see each other again. But that's not it. Leaving is like the closing of a chapter of one's life. Of course we're sad — thirty-five days that we've all dreamed of and looked forward to are over, and now: past, has been.

The other night my girlfriend called me. She asked if I felt empty. I'm not really sure that's the word for it.

Here's a little gossip from the last night; turns out one girl (not in our group) is pregnant. Also; Watson and Joy didn't want to do another map. I guess everybody was tired of them. At least I got a checklist out of them.
We said goodbye. I watched the cab out of sight. I went back up the steps and into the bedroom and pulled the bed to pieces and remade it. There was a long dark hair on one of the pillows. There was a lump of lead at the pit of my stomach.

The French have a phrase for it. The bastards have a phrase for everything and they are always right.

To say goodbye is to die a little.

...RAYMOND CHANDLER
The Long Goodbye
It was hot in Worcester. It was hotter in August than it had been in June. I had a towel around my neck to soak up the sweat. I might as well have had a dog collar on for all the good it did. I sat on the edge of a bed unpacking. It was early afternoon and already the sun was banging its way into the room like it was the only place it had to go. The fan kept the dust on the floor up in the air to play with the light, but it didn't do much more. Through the open window I heard kids playing ball in the back yard. They called it playing ball. I called it an afternoon-long argument. It sounded like you couldn't wiggle your toe out there without someone calling foul. I didn't have to listen hard. Their voices came into the room like the sun; unrelenting, innocent.

"Mr. Wood! Oh, Mr. Wood!" I strolled out to the back porch with my towel and looked down into the yard. It was Mike and Punky and David — the kids from up and down-stairs — and some other kids I didn't know.

"Our ball went on your porch," Mike shouted.

I looked around for the ball. It was one of those red rubber things that cracked and show their brown insides. It had rolled behind the planter. I picked it up and threw it down to them.

"Thank you, Mr. Wood," Boy were they ever polite when they needed you. It was a lot cooler out on the porch — at least a degree. I sat down on a chair and lighted a cigarette. That made it even cooler. I watched the smoke curl around my hand as I shook out the match. The match made me think of the trip. I touched the end of it. It was still hot. That was the trip all right. It flares, dies and stays hot. The trip had happened, ended, and yet inside me it was still going. It had a lot of inertia. I wondered how far it would take me. I exercised my legs by putting them up on another chair and let the trip burn in my mind.

I thought about endings and goodbyes and wondered how many of the kids I had said goodbye to. It was a silly sentimental question but I wondered about it all the same. I ticked the kids off on my fingers. That was one thing I'd learned in thirty-five days — the names of all the kids. Rhoda Noyes? Rhoda Noyes. I couldn't think of Rhoda without thinking of Susan Lincoln and as soon as I thought about Susan I thought about Betty Baker and Claire Mayo. A quartet.

Vanessa Garrison? Did Vanessa even go to Capri? I couldn't remember her getting on the bus. I passed her over in a hurry. Therese Montaigne was another. I never got to say so-long to her. I saw her once in Paris, on the other side of a busy Metro station.
Ann Hendricks, Bobbi Seward, Jane Brown, Agatha Jones.
Had I said goodbye to them? I remembered saying see-you-later to Jane.
She hadn't gone to Capri because an insect bite had swollen her cheek to
the size of a baseball, and she had been stretched out on her bed with
door open when I left the dorm in Rome for the last time. I'd looked in
and asked her how she felt. Miserable, she'd said. Then we'd said
see-you-later. The rest of them, I just couldn't remember how it ended.

A drop of sweat wandered out to the end of my nose and hung
there. Good old Wood. Man with the photographic memory. Take away
his notes and it crumbles into glittery incoherent fragments. Fragments.
I lit another cigarette and considered four of them; Fisher, Pierce,
Heller and Bill Brown. I knew I'd never said goodbye to them because
we were talking one night in Paris and were interrupted. We didn't say
goodbye because we never knew it was goodbye. Truncation. Stopping
without an end. An old story. Laura Johnson knew it was the end. Don't
ask me how, but she was there with the rest of them that night and she
kissed me goodbye.

I flicked ashes into the planter and watched them curl and
turn grey. Who else hadn't I said goodbye to? Phylis Gordon for one,
Joy Gray for another, Tracy Cummings for a third, Dave Abrams for a
fourth, Porter Portman for a fifth — the rat, Des Jencks for a sixth,
Vittoria Palazzo for a seventh, Lana Monroe for an eighth and Marina
Giaconda for a ninth. That's over half the kids on the trip. What did it
matter? It mattered! It mattered a lot. Things are supposed to have a
beginning and an end. That ending is important. It rounds out relation-
ships the way coffee, brandy and a good cigar round out a meal.

I remembered saying goodbye to Taylor Nash, mostly because
it wasn't goodbye. He and I and Watson and Karl spent one of our last
afternoons in Paris wandering around. They were shopping, trying to fill
those lists of things to bring home to the infinite relatives, or just get
rid of their money. It was getting late in the afternoon and Taylor and I
were leaning against opposite arches of an arcade in that commercial mess
between the Louvre and the Opera looking out at the passing traffic.
Watson and Karl were inside a leather goods store negotiating a leather
bag. Taylor was wearing his blue canvas sneakers and I was wearing his
leather bootlets. He glanced at his own feet and then looked over at mine,
I looked down at them too.

"Let's trade shoes," he said, "I can wear those to church."

So I took off my — his — shoes and he took off his shoes and,
one at a time, we threw them over to each other. He put on the leather
jobs and I got into the tennies. Watson and Karl appeared without a leather bag and it was time to go home. We shared the Metro line as far as Denfert-Rochereau.

"See you tomorrow," came floating up from the ball game in the backyard. David and Punky were going in to eat. Their feet clattered on the back stairs beyond the porch. That was the difference. Continuity and termination. See you tomorrow, hasta la vista, au revoir, until then I am sincerely yours — they all contain the seed of going on, of continuity, of life. Goodbye, adios, farewell contain no seed and they are as terminal as the big sleep. Every goodbye is an intimation of the long goodbye, that goodbye after which no goodbye is ever said again, except beside the grave from which no answer comes. You accept it, or you don't. And you'd better.

Yes, Wood, I said to myself, yes and no. You're getting too serious. The funny thing about saying goodbye to Taylor was that it wasn't goodbye anyhow. I saw him later that night, sitting in front of the dorms with Candy and Wanda and Sven and Bill. We talked and after a while he turned to me and said:

"I feel a song. Do you have a pencil and a piece of paper?"

I had a felt tip pen and a book with a white fly-leaf. I gave them to him. He wrote:

I found on this day one very good thing,  
The power in words, the power to sing.  
The ways of life are not always right,  
In the days to come, I just might,  
Say some things that just aren't right,  
And I'll fight the day to sleep the night.  
When morning comes, I'll say some more,  
After hours of walking the floor.  
But I found on this day one very good thing,  
The power of words, the power to sing.

There was no goodbye when we parted that night. There didn't seem to be any point. It would have been putting the cork in an empty bottle.

The last people I saw in Parks were Karl Prinz, Erica Cruz, Mrs. Needham and Janine Eber. We said goodbye. We met at a small cafe across the street from the Gare Luxembourg. The Boulevard St. Michel was heavy with life and the trees in the Luxembourg Gardens were
a dusty green under the yellow sky. It might be the most beautiful spot in
the world for the world is there, swirling on its way. The seats of the
cafe wandered out into the street and I sat at one dripping with sun. Erica
and Karl moved in my direction down the street. They were holding hands,
the only couple to make it through the tour. Erica was toying with a single
white daisy. It was her birthday. Karl had a beer and Erica a Coke and
we pushed words at each other across the table. We shouldn't have. There
was no need to. It was nice just to be there. Janine and Mrs. Needham
came along and flopped into seats and had Cokes. Janine had a present
for me, a hardbound comic book called Asterix le Gaulois. I loaned her
the one I was reading: L'Oreille Cassee. The hero of mine was a young
newspaper reporter named Tin-Tin; the hero of hers was an ancient Gaul
named Asterix. They had one thing in common: they made good reading.
Janine and I discussed their respective merits while the sky turned to
hazy gold and the Cokes went flat. Mrs. Needham wanted an omelette
and they were hungry. Places wanted me to go to them. There were
goodbyes. It wasn't painful. I was beginning to understand. We split.

lap and licked my face.

"Okay, Homer. Let's feed you. Time to go out." I fed Homer
and put him on the leash and walked him up to the park to wait for Ingrid
to come home from work. My beautiful park. Where were the trees?
Where was the little old man to take my franc and give me a seat beside
the fountain? Where were the gardens? The palace? The Punch-and-
Judy shows? The merry-go-round? Homer romped and fetched sticks
and I looked and could not see. I was still in Paris.

* * *

Autumn came, putting weeks between us and the trip and still
the trip went on. Early in August we'd visited Nybia and Janine and toward
the end of August we had written each of the kids individually, including
the letter in an envelope filled with map blanks, bus seating charts, and
adjective checklists. In all of our minds the trip went on each day, being
reformed and remolded and recreated. And forgotten. This trip was a
Group L experience despite the fact that it was happening in scattered
places and scattered times. Now the trip was happening all over the
United States and the connections between the kids and between us and the
kids were by mail. It was slow motion. You would say hi how are you one
week and next month you would hear I'm fine how are you. Sometimes you
would hear other sorts of things in the webs of letters, things that weren't
so nice. The first letter we received in answer to ours was from Porter
Portman. It was his last. The letter was typed on bonded paper embossed with the seal of the United States in shiny gold. The conclusion read:

...Now that the trip is over, I have nothing more to gain from anyone on the trip and can tell you of my little feat. I really outdid myself. If you will recall, after Venice I was never very far from you and Beck. I was looking for an opening, an opening which I found in Rome, on the night of your birthday. The key man in my plot at this time was one Dino, a very learned man, a very self-righteous man, a very pliable man. Ask Beck to think who was first off the bus after your little binge. After all, someone had to hurry get Dino out of his office, where he never would have seen you, and get him where he could and did see you, before you could get to your room. Yep, it was lil old me. Beck's assistance with our Rome presentation was exactly the opening I was looking for to dispose of him. I merely told Dino and the T-C's about it and the rest is history. Incidentally, about the "sadness in my eyes" — camouflage. I still had much to gain from the others and didn't want them to know that I was responsible for your destruction. A good sabotuer always covers his tracks, and I am the best sabotuer you'll ever know. In closing let me say that I have neither the time, nor the desire to invest my efforts in your project.

"He who enrages the rhino, should not be surprised when he is crushed by it."

Portman

As I said, the trip was still going on, each day being recreated, remolded, reformed, and forgotten. Portman's letter was unique in our growing stack of letters, but then Portman was pretty unique anyhow. Of the twenty-six kids who responded to our initial letter, only one other refused to participate in the post trip phase of the project. But Bill Brown had reasons you had to respect;
Well, it took me long enough to answer your letter, since I have been busy working ever since I got home.

In reply to your question, whether or not I wanted to draw maps for you, my answer is NO, I do not want to cooperate. My reason for this is that I do not want to be bothered with drawing maps. Secondly, I am usually working and with school coming up I really do not have very much time to spend drawing maps.

Please do not interpret this answer as if I am not drawing maps because I do not like you or anything like that, because you are my friend. I really did miss you as courier because you were a bit more permissive and easy going than Odin or Tom. I did not like Tom as courier and most of the time wished you were the courier instead of him. I want you to know that Nobody influenced my decisions in drawing maps in Europe or now. It was my decision to draw maps of London and Rome and fill out the stereo matrices, and it is my decision now not to draw the maps after the trip.

I am, though, drawing a map of where I live in case you ever wanted an Idea of the area where I live: BUT THAT IS ALL I AM GOING TO COOPERATE (just to make myself clear). I do hope you do not take this personally as I am your friend.

Yours truly,

Bill

Very clearly, the trip was going on and Group L was only in the earliest stages of working out the consequences of its experience. In the early stages of the correspondences the law was long letters. Rumor reached me that Nybia had written Janine a letter one hundred pages long. I got many over seven pages long, containing enough details about everything to swamp project central. Where their energy came from I don't know. Mine began to dry up as I began to get going on analyzing the
summer's work. My letters grew shorter and shorter, and the answers that came back to me followed suit. Three pages became the norm, then two. By Christmas it had dwindled to cards. But there was a richness in the long series of letters that trickled in during the fall, a detailed depth and a free-flowing imagination and a seriousness of intent that resonated with every memory of the trip. As the letters came in, images changed and shifted and the trip was for me an image constantly growing rather than shrinking. Some of the letters contained information particularly relevant to the summer work:

...This summer helped me a lot, particularly your program. I came to Cornell completely blind. I didn't know the campus at all and I used what I learned this summer to put it all together, and the result was that I learned more about the campus faster than I normally would have. Learning all at once to cope with a certain environment makes everything clearer. I lived my whole life in Fredonia and I couldn't have given you directions on how to get around in it. But I've seen the overall picture of Cornell and I can get around very well. Enough of that.

...And about the maps, I really enjoyed doing them. I sat at my desk remembering little bits and pieces and trying to put them together. As you can tell it was unsuccessful, but it was an enjoyable, relaxing experience (I just went through a week of exams).

That's all, Love Phylis

But the trip was more than maps. Maybe I haven't been able to make that clear. Maybe David Abrams can help:

...First of all, in the past few months I have been very involved in many extra-curricular activities. I am involved in a sensitivity class, tutor a child in the inner-city, partake in planning school functions (for my first time ever), take classes in Kundalini Yoga, and Transcendental Meditation. Mostly I have been involved in living yoga and seeing the truth. For example, wherever I can, I get up at 5:00 a.m., do an hour of Yoga, take a cold shower, and then I
do an hour of meditation. I am very happy for
most of these days (which are infrequent
because I go to sleep so late).

Keickesville is a town in which most of the kids
are strung out on some kind of dope most of the
time. Last year all of my friends did dope a lot
and I got into it with them. When I got involved
with you, something strange happened. Many of
my new friends are Yogis and they are very nice
people, but my old friends have proceeded to
follow me in doing Yoga also. No one does dope
anymore (at least of my friends). Denis, do you
remember that "community" spirit that Bob
talked about in Rome? I feel as if I am undergoing
that same type of "community" here. I think it
is very nice, even if it is kind of fake.

David isn't big on kidding himself.

A lot of letters ended in a common note. The example is
Laura Johnson's but it could easily have been anyone else's:

P.S. Any place you want to hold a reunion is
find with me. I'd like to talk to you and Bob
sometime and I'll call first!!!!!
P.P.S. Hi! Ingrid! If you're what Denis
described you as, I'd really like to meet you.

Throughout the fall talk of a reunion grew. But it was integral to the rest
of what was going on. The trip hadn't ended. It seemed silly that we were
all spread out over the U.S.A. No one had said goodbye, well, practically
no one. Talk of the reunion was interlarded with news, progress and
memories.

Marina Giaconda wanted to do her senior high school project
on the mapping problem. She wanted to draw, and analyze, maps of a
novel environment. The environment was at hand: Boston, a place she'd
seldom visited despite her proximity and a place she was beginning to
visit with increasing frequency. Bob, Ingrid and I spent a day with her
and Lana Monroe, discussing Marina's project, video taping them about
the maps, seeing the town of Wakefield through their eyes, and, seeing
her slides of Europe.

Janine sent Bob a letter on a balloon. We talked to the kids by
phone. Talk of the reunion grew. We discovered that more kids than we'd thought were college freshman. Talk of the reunion grew. Wanda Pierce got married and Bob Watson drove three hundred miles to attend the wedding. Talk of the reunion grew. Janine collected memories of the bus seating arrangements of the play. Our second envelope containing map blanks, adjective checklists and bus seating charts went out. By late November we had twenty-three sets of schedules back from the first mailing. By mid December we had sixteen sets returned from our second mailing. Talk of the reunion was scrawled on maps, around adjective checklists, on bus seating charts.

Naturally it was Janine that finally got the reunion off the ground. I messed her up by switching hotels on her at the last minute but she was the one who wrote everyone when, where, and how. In addition to being one of the project investigators she was also the Group L social secretary. Group L no longer had even the vestiges of being a passive tour group, nor were Bob and I anything but fellow members. It was a nice feeling.

Christmas cards started to flow in. Vittoria Palazzo wrote: "As for the maps, my sentiments are the same as Taylor's: I don't want to but I will." That's how I felt about the reunion: I didn't want to, but I went.

* * *

What I didn't like was the idea of a reunion. It suggested octogenarians tripping over each other's canes and saying "Is that really you, Herman?" R-E-U-N-I-O-N. It was something for your high school class to get keen on when other things in life lost their interest, or a way to raise money for your college. It had to do with a world alien to Group L.

I was also a little worried about the timing. It was to be a day's length. Sometimes that can be a long time. Sometimes you can just begin to get into things in a day. A day was either far too long or far too short, but it wasn't right. We should have done it right for three days and rented a bus.

But the real reason was personal. It was happening smack dab in the middle of Christmas vacation, smack dab in the middle of Christmas. Christmas doesn't mean a whole lot for a whole lot of people but for Ingrid and me it means almost everything. It means a huge Christmas tree and lots of presents and getting up early Christmas morning and late the rest of the time and it means Ingrid takes a week's vacation and makes lots of
cookies and fruitcakes and we just weren't sure we wanted to break into all that with a trip to Fun City.

So we didn't want to go, but we did. At 6:00 a.m. on the Wednesday morning following Christmas the four of us piled into Bob's car and headed south. The four of us were me and Ingrid and Bob and a friend of his named Jill. On the road right behind us was Lana Monroe with Bob Watson, who had driven to Worcester with a friend all the way from Indiana. The whole thing was so crazy, it had to be right. The day was perfect, cold as chilled champagne and just as clear and effervescent. The sun chuckled at us over the rim of the world somewhere in Connecticut and we stopped to get a quart of milk and a box of doughnuts. It was a nice trip down and on that day New York looked as fresh and clean as a baby's smile. The doorman at the Commodore didn't sneer at the '64 Chevvy and, for not much more than all the gold in Fort Knox, agreed to park the car. We wrestled the video equipment into the lobby and fussed about our room at the desk. The lobby wasn't as big as Grand Central but it tried and there in the center of it stood Janine Eber, as sparkling as a daffodil in the spring. The fur of her collar matched that of her muff and she wore her hat at a cocky angle that I thought had gone out with Greta Garbo. It hadn't — it had the same impact as ever. We were gentled to the seventh floor by an elevator that made all the sound of a leaf falling and followed a green livery to our suite. We had a living room, two bedrooms, and two baths. The decor was there but it didn't give you a black eye. The Chrysler Building poked at the clouds out our east window and Grand Central rumbled beneath our west window. Behind the station the Pan Am Building blocked the sky the way Jim Otto blocks for the Raiders. Our south exposure looked across 42nd Street at acres of glass windows.

Lana, Watson and friend arrived shortly after we did and Group L was getting together again, which was fine, except that we had nothing to talk about.

"How are you?"

"I'm fine."

"Good."

"And how are you?"

"Oh, I'm fine too."

"Good."
Silence.

As the afternoon wore on the suite started filling up. In the end nineteen people showed up. Karl — all the way from Milwaukee — and Erica came and let us laugh about his misadventures in the big city. Claire Mayo and Betty Baker showed up and we picked up some news about Miss Bloch and their future plans. We heard about Mrs. Needham and played around with the video tapes. Then Nybia rolled in dressed for an opening of the opera, looking elegant and supercilious except that she was still Nybia and nothing could ever take that away from her. Taylor Nash showed up all the way from Indiana with three friends. They were staying in New Jersey. Vittoria made it away from the gas pumps at her father's garage for the late afternoon all the way from Far Rockaway — and that's a long way from anywhere I've ever been. I gave a short and ill-conceived talk on the progress of the map analysis to which everyone listened politely but without comprehension, making me feel like a tour leader and that was it. I went out into the city for a walk with Leslie, Candy and her friend. Candy and friend had taken the train from Iowa to stay with Leslie. It was dark out and the city was bright with lights the way only New York is bright with lights. Park Avenue looked like something out of Midsummer Night's Dream with twinkling fairy lights on the branches of all the little trees below the banks of lights in the walls of buildings beneath the stars. Yeah, you could even see stars.

Back at the Commodore kids were leaving. Claire and Betty had gone to have dinner in the city with their parents. Nybia's younger brother came to pick up Nybia, Erica and Janine. They were going to come back later and then keep on reuniting for a couple of days. Candy and friend were flying home that night. Candy had a job and had only taken a couple of days off. Bob and Jill were going to spend the night at the Commodore along with Lana, Watson and friend. Lana was planning on staying until New Year's; who knew what Watson and friend were planning. Some of them had wandered down to Times Square to look at the lights. It was time for me and Ingrid to leave. We were taking the bus back to Worcester that night. Bob Watson left with us.

The three of us descended to earth and wound through tunnels beneath it to the subway shuttle to Times Square. We sat and waited in the shuttle while it tried to vibrate our teeth loose. We hustled against time through the endless corridors connecting Times Square with the Port Authority. Bob and I went to buy tickets while Ingrid dashed down to hold the bus. Bob and I parted in the swirl of humanity that makes that building unique even in New York. His cheeks were flushed and his long red scarf picked up his color and threw it back in his face. His real hair shone darkly in the yellow light. He looked healthy, alive and real.
that moment he was Group L, all of it. Since I was in New York I said:

"Take care."

"I will."

"Okay. Bye-bye."

"Bye-bye. See you."

I left him standing at the head of the escalator and ran to make my bus. That was it.
"You don't spare trouble, doctor," the inspector remarked; "nor time either," he added, with a significant glance at his watch.

"No," answered Thorndyke, as he detached the finished sketch from the block; "I try to collect all the facts that may bear on a case. They may prove worthless, or they may turn out of vital importance; one never knows beforehand, so I collect them all. But here, I think, is Dr. Egerton."

. . . R. AUSTIN FREEMAN
"The Aluminum Dagger"
When the dust had settled, what had happened? Sure, Group L had come into existence. Group L had gone to Europe. Group L had even come home. And, Group L still exists and the trip goes on. What does it mean? What had happened? Is there another way of talking about this event, another way than the one I took in Part II? Maybe. We shall see. But before we do, let's pause a moment to collect our wits. I write this sitting at a table surrounded by mounds of data. In every case the data are neatly organized into folders. On top of these folders sit other folders containing summaries of the data, reductions, distillations of the data. On top of these sit still more folders containing summaries of the summaries, reductions of the reductions, distillations of the distillations, maps of the maps, lists of the lists. I look at it all and I wonder: what is it? Just what is all this paper?

I

Return for a moment, in your mind or in fact, to the introductory discussion of matter, space and time (pages 13-16). There we came to realize that matter, space and time are merely convenient bundles of events: instead of matter, space and time, there are only events, locations in space-time. Russell says:

From all this it seems to follow that events, not particles, must be the "stuff" of physics. What has been thought of as a particle will have to be thought of as a series of events. The series of events that replaces a particle has certain important physical properties, and therefore demands our attention; but it has no more substantiability than any other series of events we might arbitrarily single out. Thus "matter" is not part of the ultimate material of the world, but merely a convenient way of collecting events into bundles. (Russell, 1945, 832)

It may not be clear what Russell means by particle, or, then, to what he is referring when he speaks of events. We used his language in an almost poetic manner, extending the meaning of words by analogy and metaphor. But for Russell, and the physicists to whom he refers, an event, an irreducible event, is a very specific thing, what is commonly called today an elementary particle, elementary because it seems so far to be the sine qua non of existence. These particle-events are the stuff of nuclear physics and the names of many are not uncommon: electron, neutron, proton. The names of others seem sometimes to be the stuff of science fiction: antineutrino, antisigma minus, antilambda. These
particle-events form series of events. An example of a series of events might be the atomic nucleus. A still greater series might be the atom itself. A list of series of events of increasing magnitude might read: chemical compound, a sheet of steel, an automobile, a freeway, the Interstate Highway System, and so on. The series of all events is the universe. The example given is only one of an infinitely large set of possible hierarchies of series of events.

Let's get back for a moment to that irreducible particle-event. Understanding, that in the final analysis, an event is merely, or entirely, a location, a warp, in space-time, allows us to ask an intriguing question: how are these particle-events studied? No one has ever seen one of these particle-events, or touched it, or heard it, or felt it, or tasted it. Yet it has been detected. What does that mean? The American Heritage Dictionary says: "To discover or discern the existence, presence, or fact of" (page 359). Definitions are slippery things. When you try to latch onto them they slip through your fingers like babies' hair. Rather than push this one around in its natural circle, see what it looks like in action. To detect requires the assistance of a detective or, at least, a detector.

Chen Ning Yang lists three basic types of detectors in use for the study of these particle-events (Yang, 1962, 38). In the first class are such devices as the ionization chamber, the Geiger counter, the Scintillation counter, the Cerenkov counter and so on. In the second class are included the cloud chamber, the diffusion chamber and the bubble chamber. Photographic emulsion is alone in the third class. Of this last Yang writes:

...C.F. Powell and his group in Bristol had developed the technique of using photographic emulsions to detect charged particles. The ions produced in the emulsions by the charged particles along their paths cause black grains to appear after development. These grains mark the tracks or paths of charged particles through the emulsion. (Yang, 1962, 21-23)

While all the detectors listed above are not identical to the use of photographic emulsion, they are similar in one regard: they record or indicate the passage of an event. It might be said of them that they actualize or eventualize an event. Note that they do not in any way capture or seize the event, but merely indicate its occurrence, its passing, its being. The clicks of the Geiger counter, the trails of condensate in the bubble and cloud chambers, and the tracks on the
photographic emulsion are like the footprints of an escaping criminal, or the cookie crumbs left by Santa Claus from the snack left out for him on Christmas Eve. The footprints are not the criminal, the crumbs are not Santa. Nor are the trails of elementary particles elementary particles. Thus it is that the data of the physicist consist—not of mesons and neutrinos—but of their trails. The actual event is gone before you can say "hello."

To prevent my point from slipping by equally quickly, let me make it again, and more generally: a student, or scientist, never studies events themselves. He studies their traces, their trails, their paths through space-time. No one studies the thing he is studying and this is the dilemma of science. The eventual character of each and every event or series of events eludes the scientist forever by the mere fact of being an event. We are left with trails, fleeting glimpses, ticks, counts, measurements, paths, footprints and crumbs.

Not only is the event gone before you realize it, but between the trail, the click, the path in the photograph and the event itself lies a gulf, a gap that is in the profoundest sense forever unbridgeable. Consider the question of the existence of Santa Claus. What evidence is there that he exists? For one thing there are the toys beneath the tree; there are the thousands of pictures of him plastered around the world at Christmas time like the picture of Mao around China; there are the many Santas sitting in the many department stores or standing on street corners ringing bells. But that is all circumstantial evidence, much of it conflicting and contradictory. Is there a way of proving that Santa is?

It is the custom in many homes to leave a glass of milk and a plate of cookies for Santa Claus on Christmas Eve. The supposition is that Santa will come down the chimney, deliver his toys and before moving on to the next house, stop for a snack of cookies and milk. Christmas Eve arrives and the cookies and milk are laid out lovingly just before bedtime. The next morning the kid rushes into the kitchen to see if Santa's arrived. Behold! The cookies are gone and only a few crumbs remain. The milk is gone leaving only a white ring around the glass. Therefore Santa has come. Consider this custom as a scientific experiment. A hypothesis is formulated to the effect that Santa exists. An experiment is designed to test this hypothesis by forcing Santa to leave a trace of himself. The results are positive. The conclusion is that Santa must exist.

Santa is the event, the elementary particle, the subject of study. The cookie crumb, the ring around the glass are the trails, tracks, paths: the data. Consider the crumb. What is it? It is not Santa. It does not catch Santa, it does not make him manifest. From this crumb we
cannot describe Santa's height, girth, age, sex, race, manner of dress, system of beliefs, and so on, and although we might come to some conclusions regarding his appetite and taste in food these would be highly speculative in nature. What, then, do we see in the crumb? Only this; a crumb. Such is all data. It is not the event, nor can the event be studied in the end by analyzing data. Only the data can be studied, and thus the analysis of data descends to the analysis of data and nothing more. Descriptions, explanations, understandings of events have nothing to do with the analysis of data. In this case, and in every case, they are separated by an unbridgeable gap.

There was a Lucille Ball show on TV once that made a great impression on me. Lucy is hauled into court for driving the wrong way down a one-way street. When arrested, she was not moving, but the direction of her car indicated that had she been moving forward she would have been in violation of the law. Lucy protested her innocence, claiming that she was driving backwards the right way down the street. The court is skeptical. Lucy asks for a ladder. The ladder is brought into court and, while the arresting officer covers his eyes, Lucy ascends the ladder and then starts back down. Halfway down the ladder, she asks the arresting officer to open his eyes. What's she doing she asks him. He says she's going up a ladder. The court gasps and Lucy is let off. It was just a dumb TV show, but that's the gap between data and event, and that's how big it is. The scientist, like the cop in the story, is stuck with the data, the trace, the trail, not with the event.

In no branch of science is this more obvious than in atomic and nuclear physics. To go from the click-click of a Geiger counter, to go from a trail etched on a photograph to describing the characteristics of elementary particles is to go a very long way on very little. Physicists have turned this impossible journey into a supreme art. Writing of the years immediately following 1913, Yang says: "We could only wonder what it was like when to reach correct conclusions through reasonings that were manifestly inconsistent constituted the art of the profession (Yang, 1962, 9). Yang is not disparaging here, Rather he is filled with admiration for the spirit of the physicist that boldly crossed the gap between data and event, and who, without looking backwards for a second, without regard for consistency, came nonetheless to acceptable conclusions. But in the same breath, Yang is pointing to the reality, to the horrifying reality, of that gap, that gap between subject matter, between event, and data.

Physics is not the only science that is forced to study trails and traces. Such is the fate of all scientists, of all students, probably of all who would describe. The event events, and we are left watching the trail of vapor in the sky, listening to the dying roar. We search the sky
in vain for a glimpse of the jet. There is nothing else to study but tracks. For all that an event is ineluctable, it is likewise evanescent. The one thing that may distinguish physics from other sciences is the distance its practitioners have gone between event and data, between data and description. They have gone a long way on very little.

So far we have discussed the evanescent nature of the event, and the distance separating that event from its grace, our data. But the fact is that the data are an event, for there are nothing but events. Nonetheless, it is clearly possible to distinguish between the event of interest (an elementary particle or Santa Claus) and the trace event (trail in emulsion or crumb). Yet the distinction is meaningful under only one condition: that the trace event be always considered in the context of the event of interest. If the focus of interest shifts, from particle or Santa, to photographic emulsion or crumb, it is these trace events that become the events of interest. To study these, further trace events must be isolated. A possible set of trace events for the study of photographic emulsion or crumbs might well be the traces, the data, obtained through chemical analysis. As you see, science is the art of isolating trace events in a given context of interest. To modify an old cliche, one man's trace event may well be another's event of interest.

The role of the trace event, the data, must now be clear: indication that an event has transpired. It freezes the evidence of this passing in a useful form. Although a particle event transpires in a brief instant, the trace can be examined for years, even centuries, and used in any number of locations. Although Santa comes and goes in the night, the crumb remains to beguile the eyes of the child on the following morning. The event has transpired but the data hang around and around and around.

In summary there are four points about the nature of data:

1) Data, or the trace event, can never be confused with the event of interest. The trace event is never the subject matter of study.

2) The trace event is forever separated from the event of interest by an interval that remains uncrossable.

3) The role of the trace event is to freeze evidence of the passage or occurrence of an event in space-time.
A trace event is only a trace event in the context of an event of interest; and a trace event cannot be divorced from the context of an event of interest.

Restated in terms of Santa and the crumb, these observations read: 1) The crumb is not Santa, nor is the crumb the focus of interest; 2) The crumb reveals nothing about Santa himself; 3) The crumb freezes evidence of an event at a point in space-time; 4) The crumb outside of the context of Santa is nothing more or less than a crumb; and when divorced from this context becomes an event of interest in its own context, thus contradicting point number one, and hence disallowed. What does the crumb say about the existence of Santa? That he came in the night? That's right, the crumb can't say who came in the night, nor what, nor when, nor how, just only that an event transpired. Period. Does Santa exist?

Yes, Santa exists. And so also do the Tooth Fairy and the Easter Bunny. For millions of humans they are achingly real events. Their existence is as incontrovertible as the dime left under the pillow, the colored eggs hidden on the lawn, the crumb left on the plate. These things are data and it is their role as data that is important, nor their physical substance. The crumb is not the critical thing about the Santa Claus. Santa eats cookies every night. The crumb is important only in that it freezes, preserves, the event of the Santa's coming.

"Santa Claus came last night," one kid shouts to another.

"Awww, gwann! Santa Claus my eye!" comes the response.

The first kid holds out the plate with the crumbs. "Look what he left behind."

There is a light in his eyes.

I I

Crumb. Crumbs. On a plate. If you look closely at my eyes, you will see a light in them. I am holding the plate out for your inspection. Here's what's on it:
TABLE 13.0

GROUP L DATA: A LIST

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<th>Where</th>
<th>When</th>
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</tbody>
</table>
Each trace event in the table has been isolated in space-time, or rather analyzed into a space-element and a time-element. This is in fact not the case at all. The where and the when in no way apply to the trace event, take as a specific example London Map #2. In my mound of data are twenty-six second maps of London. These maps, these pieces of paper, constitute the trace event, and they are here in Worcester. Furthermore, they have been here for months. The when and the where refer to the time and space elements of the event of interest, in this case twenty-six kids mapping in London on the 6th of July. It is the event of interest that has been analyzed into its space-element and its time-element, not the trace event. These maps may contain information of a temporal and spatial character, but that is to be discovered by analyzing the maps themselves (by isolating other trace events to help us do the jog). The location of the event of interest is not inherent in the trace event. It cannot be discovered by an examination of the trace event. It has nothing to do with the trace event. It is an attribute of the event of interest itself. This is to say, that the data and location of the data creation are not attributes of the data, but rather of the event of which the data is a record. The locations assigned to the events in the table are approximate. Let me give you a few examples.

<table>
<thead>
<tr>
<th>The Trace Event</th>
<th>Where</th>
<th>When</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remembered Map of London</td>
<td>Hometown</td>
<td>30 September</td>
<td>24</td>
</tr>
<tr>
<td>Remembered Checklist of London</td>
<td>Hometown</td>
<td>30 September</td>
<td>24</td>
</tr>
<tr>
<td>Remembered Bus Seating Chart of London</td>
<td>Hometown</td>
<td>30 September</td>
<td>24</td>
</tr>
<tr>
<td>Remembered Checklist of Innsbruck</td>
<td>Hometown</td>
<td>15 November</td>
<td>16</td>
</tr>
<tr>
<td>Remembered Map of Innsbruck</td>
<td>Hometown</td>
<td>15 November</td>
<td>16</td>
</tr>
<tr>
<td>Remembered Bus Seating Innsbruck-Venice</td>
<td>Hometown</td>
<td>15 November</td>
<td>16</td>
</tr>
<tr>
<td>Remembered Checklist of Venice</td>
<td>Hometown</td>
<td>15 November</td>
<td>16</td>
</tr>
<tr>
<td>Contact (letter or visit) since trip</td>
<td>Hometown or New York</td>
<td>Dated</td>
<td>27</td>
</tr>
<tr>
<td>Bus Seating Charts (54)</td>
<td>Noted</td>
<td>Dated</td>
<td></td>
</tr>
<tr>
<td>Notes (100 pages)</td>
<td>Noted</td>
<td>Dated</td>
<td></td>
</tr>
</tbody>
</table>
1) The Psychological Questionnaire #2 is located in the kids' hometowns. This is true for most of the kids. Nonetheless, five were completed on the trip itself. Since the majority were completed at home, however, this location has been assigned.

2) Stereotypes #2 is located in Oxford. Since this schedule was filled out on a moving bus between Oxford and Stratford-on-Avon, Oxford is an approximate location.

3) The same is true of the events occurring in Venice. These also took place on the bus trip from Venice to Florence.

The same is true of the times at which events occurred. I followed this general rule in assigning a date: when more than half the material is dated at a certain time, I have assigned that date as the time at which the event occurred - when less than half the kids agree on a given date, I have arranged the information chronologically, and used the median date. In this last case the information usually has different dates on each individual piece. This is particularly true of post-trip information which arrives in the mail over a month's time. In regard to the map sessions in Europe, I have been able to follow the majority rule in every instance, though it should be clearly understood that the first map drawn by a kid was so labelled no matter on what date it was drawn. In some cases all of the material was collected within a given hour. This was true of almost all the material collected on the moving bus. In the case of the Adjective Checklists, all of them were collected within a given ten minute period.

The trace events listed break into one of four types, or combination of these types: 1) Verbal; 2) Graphic; 3) Matrixed; 4) Mapped. Each type involves active participation on the part of the respondent, but some require more strenuous activity than others. All of the information that can be mined from these types can be used to discuss the tour event, and from a variety of perspectives. The information can be used to discuss the kids individually or collectively, to make remarks about the environment, and to discuss the relations of the environment and the kids, collectively or individually. The emphasis varies from type to type.

1) Verbal Type. The verbal information contained in the trace events is of three sorts: a) Answers to questions couched in sentences; b) The creation of lists in response to questions; c) The notation of prepared lists. Most of the verbal information consists of these last two sub-types. Sentence-like answers to questions show up only in the psychological questionnaires and on the early map materials. The
advantages of this type of information are numerous and well-known; information beyond the demands of the researcher is provided, usually leading to greater insights and to the formulation of yet more successful questions. Nonetheless, the information is often incomparable, and hence useless when dealing with group phenomena. Consequently, this sub-type has been employed as a trace event in those instances when the information is most likely to be considered in the context of an individual kid. Sub-types b and c have none of the advantages of sentence-like responses, but at the same time do not suffer the disadvantage of incomparability. If a category sufficiently broad can be defined, individual lists can be merged to a single for the group. At the same time, any single list can be considered in the context of an individual. This is particularly true of sub-type b where the kid generates his own list. The individual list can be used to construe the definition of the question from the kid's point of view and is doubly useful in this regard. Sub-type c includes the Adjective Checklists. In this case the information is absolutely comparable and the analysis of a set of checklists can be considered a collective group response. Utility in regard to the individual is limited, though not nil. It is limited because the individual is constrained by the prepared nature of the list. It is impossible to assess individual feelings in this case, except as a function of the list. That is, there are three variables in the use of this device: the stimulating environment, the kid, and the list. In the freer forms the list is implicit in size of vocabulary and ability to use language, neither tested in Project Group L. Because the list is implicit in sub-types a and b it is seldom considered there, but must be considered in sub-type c. Interestingly, the kids insisted on their right to violate the explicit instructions of the adjective checklist; they employed multiple checks to add emphasis. On the list, you are allowed to check or not check a descriptive adjective. The kids did this, but added double and triple checks to enrich the act of filling out the form. Further, additional adjectives crowded the margins of the paper.

The Adjective Checklist was the only investigative device that was consciously modified by the kids without encouragement. The reason for this is not hard to find, and will be pursued in the discussion of the remaining types of trace events. If the kid is to be considered the event of interest, it is obvious that detectors must be employed to catch the kid in action. The detectors are the trace events, the schedules employed in Project Group L. However, a kid is not an elementary particle, and objects to having his existence confirmed via a Geiger Counter. Of all the schedules employed in the project, the Adjective Checklist best resembles a Geiger Counter. In fact, the resemblance between the click of a pencil beside an adjective and the click of the counter is greater than is comfortable. The activity required of the kid in filling out this form
is so close to nil as to enable us to describe the kid as passive in regard to this schedule. Passivity is a two-pronged problem. On the one hand, since it demands minimal effort and consequently fails to hassle the kid, it is easily accepted. ("Sure, I'll fill out an adjective checklist. It only takes a flick of the wrist and five minutes.") But on the other hand it is at once insulting to the intelligence and incapable of inducing the sort of "pride" in effort that leads to decent results. Those kids that valued ease of accomplishment over pride of craft filled out the list as required. But those kids who valued pride over ease enriched their experience by increasing their role, by reducing their passivity, relative to the form. "Pride" is an inadequate and incorrect word, yet hopefully it makes the necessary distinction.

2) Graphic Type. This type demanded slightly more activity on the part of the student than did most of the verbal types. It was used exclusively on the psychological questionnaire, and was included precisely to increase the participation level of the student, to engage him and attract his attention by the unusual nature of the task. In these cases the student was required to discuss his energy level, for example, by filling out bar graphs, by tracing curves through graph space, by slicing pies into segments. Discussions of these types with the students reveal the fact that they were enjoyable tasks because they required a great deal of effort from the students. On the other hand, they are difficult to analyze in any collective fashion. However, they do point to the positive role played by demanding effort from the respondent in the performance of unusual tasks. The information gleaned from these devices is probably most useful in the context of an individual as the event of interest.

3) Matrixed Type. This type, actually as sub-set of the graphic type, bears a certain resemblance to the mapping operation. This device was employed on the psychological questionnaire as well as in the StereoMatrix and Rank Matrix. The matrix consisted of a graph space in which the student was to locate a mark against two variables simultaneously. The form was at once demanding of participation, and hence positively received, and yet was designed to be filled out on a moving bus where its richness diminished its appeal. Essentially, it was well designed, but out of keeping with its environmental situation. The information contained is used easily both in individual and collective cases, and refers both to the kid as event of interest and to the environment as event of interest, always within a temporal context. Of the three types of trace events discussed so far, the matrix is richest in terms of the psychogeographic orientation of Project Group L.

4) Mapped Type. Under this rubric are included two distinct schedules; a) The bus seating charts; b) the maps. Since this sort of
trace event will provide the bulk of the information utilized in describing the trip event as a whole, it requires explication. The operations involved in the bus seating charts are slightly less complicated than those involved in the mapping operations. Bus seating charts were employed in three basic situations: first, they were used to record the actual locations of the kids on the bus, second, they were used by the kids to remember locations of themselves and other kids at previous points in space-time, and, third, they were used by the kids to devise an Ideal Bus. Two operations were basic to the completion of the bus seating charts: the identification of individuals (similar to identification of landmarks in the world) and their location vis-à-vis one another (similar to the relative location of landmarks in the world). These two operations were involved whether the chart was being used to record locations in actuality, in memory, or ideally. A glance at the first charts filled out by Bob and me will show that we had conquered neither operation at the end of the tour of London on the first day. Examination of Remembered Bus Seating Chart #1 will show that the kids had not completely identified all of the kids in Group L by the 13th of July—after thirteen days. Basically, the bus seating chart was a mapping operation with this distinction: the surface of the chart was finite and the potential number of relative locations was fixed. Nonetheless, the bus seating schedules demanded great input from the student, and concerned him immediately. Further it was an obvious test of his strength, in terms of being able to remember, and generated the enthusiasm typical of an arm-wrestling session. Further, it was an obvious bridge between the stereotype schedules and the mapping operations and provided the entire project with visible organic unity that was at first missing. Additionally, it is the most complex trace event we have discussed so far. Its information can be plumbed in regard to the individual kid, to the functioning of the group, to the bus as a lived-in world-space, and to the inter-relations of these three things. As a trace event, the bus seating charts show the trails of many more particular events than any other single device employed with the exception of the maps. They are obvious traces of behavior: actual, remembered and projected.

As was true of the bus seating charts, the maps themselves required enormous input. Because the kids' input was not structured once they had absorbed the grammar and vocabulary of the mapping system, this input was greater on this schedule than on any other. It was as great as it would have been were the student asked to write a short story or draw a picture. In confronting the blank map, the student confronted infinite space and his own experience in a single arena. He was asked to reify his experience in an unstructured situation. There were no matrices, no bus seating blanks to fill in. Furthermore the mapping operation required effort from the student not simply when drawing the map but continuously. That the students recognized this is manifest from the
number who sketched maps during the tour of Rome on the first day. After making the first map of London, the kids were aware that success in drawing a map was intensively related to their degree of awareness of the environment while shopping, sightseeing, strolling and so on. The mapping operation was either an integral portion of their trip experience, or no part at all.

The first thing demanded of the student was the identification of landmarks in the environment. It was not sufficient to see a thing, but also to tag it with a descriptor: "Tower of London" or "Carnaby Street." This increased the level of activity on the kids' part. Furthermore, it was necessary to consider constantly the relation of tagged landmarks to each other. To produce a map that would vary significantly from the Predictive Morphology of London meant staying on the ball at all times. Not only was it necessary to consider relative location within the city, but to consider the orientation of these locations to some external system. Further, since the nature of individual experience is usually sequential, the mapping operation demanded that time be kept in the foreground. In very many cases the sole clue to the relative location of tagged landmarks was the sequence of occurrence of the sighting. As will be seen, the order in which the mapped elements were placed on the paper reflected the order of sighting. Sightseeing occurred in space-time, and it was this that was jugged by the kids when drawing the map, rather than the apparently simpler problem of portraying space. This adds up to a task involving the kid completely.

What sorts of information do the maps provide? Certainly they tell us an enormous amount about the individual kid, but they are equally rich with regard to the perceived environment. In mapping we are taking the pulse of the man-land interaction as no other device can. By employing a common mapping grammar and vocabulary, the maps are also comparable one to the other, and hence yield information concerning the group experience. But these are things about which the map information tells us.

What do maps contain in and of themselves? Traditionally it has been supposed that the map contains information of a purely spatial sort; that is, the map has been seen as having spatial-spread, but not time-depth. This traditional viewpoint has been most clearly stated by James M. Blaut:

Maps artificially segregate the spatial aspect, and largely ignore the temporal aspect, of space-time reality. The map is an abstraction dealing primarily with the structure of areas;
what it generally shows is a representation of
distribution with temporal change largely
ignored except where highly simplified concepts
of change can be shown by arrows, date labels,
sequences of isochrones, degrees-of-change
devices, etc. We simply cannot portray change
by means of maps; perhaps the best we can do is
to prepare a temporal sequence of maps of one
locality, a series of artificially segregated
"instants," and force the mind to treat them as
indicators of continuous flow, much the same as
in a movie sequence (Blaut, 1954, 9).

This is Blaut's most naive set of remarks about space, time and maps, but
as such are the clearest indicators of the root of the problem. Blaut
confuses "change" with "time." Thus he states that maps "ignore the
temporal aspect" in the opening sentence, but goes on to discuss, not
"time" but "change" as though the two words meant, or implied, the same
thing. Blaut assumes that "time-change" is continuous, whereas there is
no support for this position in, for example, quantum mechanics. Blaut
assumes that a map shows "space" but provides no grounds for this
assumption. Later Blaut was to recast this set of remarks in more
"sophisticated" language, but without modifying his basic confusions and
assumptions:

The map-thing, the ink-on-paper sign-vehicle
itself, is of course relatively unchanging, and
beguiles us into thinking that the map-meaning,
the signification of the map, is something other
than process. Further confusion is added by
the fact that maps portray simultaneity directly,
pictorially, whereas time-depth is represented
only (in most cases) by inference (Blaut, 1961, 3).

In this passage Blaut clearly recognizes that the map does indeed show
"process" although he feels the map "beguiles" us into thinking otherwise.
But note that all he has actually done is to have replaced "space" with
"simultaneity" ("maps portray simultaneity") and "time" with "process."
Thus he makes in the latter passage the same remarks about "simultaneity"
and "process" that he earlier made about "space" and "time." That this is
in fact exactly what he has done is obvious from the following:

But one essential feature of all such sign-systems
(as maps), and for our purposes their most import-
ant feature, is the depiction of finite slices of
process, either as narrowly dated as the moment during which the shutter of an aerial camera is open or as broadly dated as the clock-time lapse between the earliest and latest events shown on a map. What gives these structural models the appearance of being "purely spatial" is the fact that time is signified indirectly..., while the relative spatial dimensions up-downness and right-left-ness are signified directly, or pictorially. (Blaut, 1971, 20)

Note that "process" is being sliced in this quote, just as "time" was sliced into "instants" in the first quote. In addition to the fundamental confusions made by Blaut originally, he has now compounded our difficulties by using "structure," "simultaneity," and "space" in relatively synonomous fashions, and "change," "process," and "time" identically. To give Blaut his due, I doubt that he really meant what he wrote, but we live with what he wrote.

The situation can be clarified if we discuss the model of reality underlying the three Blaut quotes, the model underlying, not only the traditional view of what a map contains, but all geography as well, particularly historical geography. This underlying model conceives of existence as a tunnel. The diameters of this tunnel are taken to represent the spatial dimensions of existence, while the length of the tunnel is taken to represent the temporal dimensions of existence. In Blaut's many languages, the diameters of the tunnel represent "structure," and at all diameters "events" are "simultaneous." The length of the tunnel represents "process," while "change" takes place from diameter to diameter, from slice to slice. In my three-and-a-half years of graduate study I have watched six widely published professors draw these tunnels, or stacks (for some reason they are always cylindrical), on blackboards with a nauseating frequency. The model has this one advantage; it allows one to stop time, freeze "change" or "process" in some sempiternal, if unrealistic, fashion, and to then examine "space" or "structure" like the movie editor at his moviola. That is, the model makes geography, if not a decent reflection of existence, at least simple, and perhaps simplistic.

The historian is not the less to blame. His model of existence is similar to that of the geographer, but with the terms reversed. The historian's analogues to maps are his "time-charts" or "chronologies," which have been supposed to have "time-depth" but lack "spatial-spread." In response to both groups H. Minkowski has remarked: "...nobody has ever noticed a place except at a time, or a time except at a place"
(Minkowski, 1964, 298), and while Minkowski provides the perfect conclusion to the debate, he provides no explanation of the source of confusion. If, in fact, there is no time except in space, and no space except in time, why do geographers refuse to see time (not, by the way, "change" or "process," confusions introduced by Blaut, but simply "time") in the surface of the map. In an intriguing little article called "Ostensible Temporality," C. D. Broad tells us why. In this article Broad tries to set up analogies between space and time. Having constructed one such, he says:

This spatial analogy is valid and useful to a point; but I will now indicate some important ways in which it breaks down. The triadic relation "between" occurs both in a linear spatial series and in a temporal series. We can say both that Bletchley is between Euston and Rugby, and that the experience of writing this sentence is between the experience of eating my breakfast and that of eating my dinner. Nevertheless, there is a profound difference. Temporal betweenness is not fundamental; it is analysable into the relational product of a certain dyadic relation taken twice over. The fundamental facts are that eating my breakfast preceded writing the sentence, and that writing the sentence preceded eating my dinner. The triadic relational fact that writing the sentence is between eating my breakfast and eating my dinner is analysable into the conjunction of these two dyadic relational facts.

Now in the linear spatial series the exact opposite is the case. No doubt one can say that Euston is south of Bletchley and that Bletchley is south of Rugby, and one can compare this with my breakfast preceding my writing the sentence and the latter preceding my dinner. But there is a fundamental difference. The relation "south of" tacitly involves a reference to some third term beside those which are explicitly mentioned, viz., to the sun or to a compass-needle. But the relation "earlier than" is a genuinely dyadic relation which directly relates two experiences of the same person and contains no tacit reference to some third term.

(Broad, 1964, 322-323)
Broad has isolated the respect in which Blaut can consider "time" as processual and changing (in the sense that the triadic relation "between" can be broken into the dyadic relation taken twice over) and "space" as structural or simultaneous (in that the triadic relation remains at least a triadic relation). But Broad's argument falters when he fails to consider the only meaningful experiential way in which Bletchley may be said to be between Euston and Rugby. This notion, which Broad (Blaut, and Harvey by the way—see his faintly naive and rather precious treatment of maps in Harvey, 1969, 369-386) would regard as "spatial" can be readily re-expressed as follows: If I were to travel from Euston to Rugby via Bletchley, my experience of Euston would precede my experience of Bletchley which would precede my experience of Rugby. In this manner, Broad's spatial phenomenon becomes temporal. But this is more than an exercise in translation for I would inquire in what sense any other interpretation of "between" has meaning. For example, if I were to go from Euston to Rugby via Featherby, then Featherby would be "between" Euston and Rugby, not Bletchley at all. That is, there is no absolute sense in which spatial "betweenness" exists outside of the temporal context. Things are "between" one another in space and in time identically, in the sense that the triadic relation "between" can in both space and time be reduced to a pair of dyadic relations and nothing else.

But if this is true, then events cannot transpire in "space" simultaneously. That is, it becomes meaningless to say that Euston, Rugby and Bletchley co-exist in the same "instant" of time. But the definition of "simultaneous" used in relativity physics supports this. Einstein says: "There is no such thing as simultaneity of distant events" (Einstein, in Smart, 1964, 283), which may be taken as meaning that only those events are simultaneous between which light cannot pass. (For if light can pass from one to another, then they are separated by the amount of time it takes light to pass from one to another, at least. But if light cannot pass between them, then they occurred in the same instant.) Clearly, the event called Rugby is not, in this sense, simultaneous with the event called Euston. But if simultaneity is not an attribute of space, in what sense can Blaut claim that "maps portray simultaneity directly, pictorially"? Clearly, Blaut's remark is meaningless.

In other words, the distinctions that Blaut makes between "space," "simultaneity," and "structure" and "time," "process" and "change" are fallacious. What then do maps portray? Obviously, they are images of events which, according to our introductory discussion, may arbitrarily be analyzed into a space dimension or a time dimension, neither of which is to be preferred over the other. Thus Blaut was more or less correct when he stated that "time" was implied by the map, but wrong when he said that "space" was directly presented. He should have
also said that "space" was implied by the map as well. In actuality, we infer "space" or "time," either, or "space-time" from a map as we will, as we find it convienent to do so. A map is simply an image of an event, an event arbitrarily bounded in each of four dimensions. The event of a map has length, height, width and duration, and the map-trace of this event, in its physical determinateness, has arbitrarily set the length, height, width and duration of the event to be represented.

And now that we have distinguished between the Blautian confusions of "time" and "process" or "change," we can also note he is entirely correct when he says that a map cannot show "change," since his notion of "change" can be reduced to the notion of "the examination of a number of events with presumed causal relations." Each event in this group could be represented by a map-trace, and the map-traces could be arranged—not chronologically—but in the order of the presumed causal chain. (This causal order may or may not be identical to a given chronological order. It would seem that chronology is very likely nothing but a function of presumed causality, but this discussion would lead us too far astray, as interesting as it would be.)

In our analysis of the Group L maps we shall have occasion to employ the time-dimension of a given map, as well as to examine a series of map-traces arranged in causal order (in this study, the causal order is not distinguished from the chronological order). The time-dimension of a given map is presumed in our adoption of the Assumption of Navigational Sufficiency (in Chapter 17), and the causal-chronological ordering of the maps is presumed in each of the following chapters. The maps provide the bulk of our data and the types of analysis they undergo are set forth below.

The first thing is the traditional Lynchian sort of thing. This is an aggregate analysis, and the conclusions apply to the experience of the group rather than to any individual. This analysis will also be applied to the Group K maps, and, on the basis of inter-group differences and the similarity of Group K and Group L experience, the causes of the drastic variation between the Group L and Group K maps can be described. The content analysis also allows remarks concerning the tour environments, particularly London, Rome and Paris, to discriminate between the tour environment and the geographic environment, and to discuss the incremental nature of geographic learning.

Taking the identical set of maps, we shall run them through what is being here called a pseudo-graph analysis. The nature of the data prevented use of graph analysis, and so this body of methodology was modified to the pseudo-graph analysis. This commences as an individual
analysis, the maps of each kid being considered individually. Conclusions here involve a discussion of types of mappers and varieties of strategies employed to come to grips with the issue of mapping an environment. Five types of mappers and strategies are isolated. The individual information is subsequently aggregated, allowing us to make remarks concerning intercity differences, as well as group changes through time.

Once again, using the same set of maps, we discuss the changes through time of a selection of individual environmental elements as they are portrayed on the maps. This information is at once individual and aggregate and the conclusions are related to the two prior sets of analysis. Since the basic issue under attack is the question of veridicality, this analysis is called the veridicality analysis.

The underlying assumption of the next analysis is that all the sketch maps of London, Rome and Paris are accurate representations of these cities. An attempt is made to understand what appear at first to be gross errors. This is accomplished by discovering the basis of projection underlying each map and relating these mental projective systems to the content analysis, the pseudo-graph analysis, and the veridicality analysis. Interesting connections are found between mapping strategies and types of projections, between content and projections. Variations are revealed that cannot be explained by the foregoing analyses.

These variations are explained by the areal and overlay analysis. Here is discovered the affective character of mental map projections. Areal extent and rules of projection are found to vary according to the attitude taken toward the city by the mapper. This analysis is both aggregate and individual in character. Attempts are made to link data obtained from the Adjective Checklists to data obtained from the attributive overlays. Conclusions from this analysis are compared with conclusions from all proceeding sets of analysis.

Finally we turn to the bus seating charts in an attempt to discover types among the kids based on a variety of socio-metric indices. Supplementary information in this analysis is derived from the psychological questionnaires. These indices are then compared with the conclusions reached by the map analysis and interesting connections are made. This concludes the trip map analysis section, though not the analysis. Our attention then turns to a brief consideration of the post trip data, and the three sets of information—pre-departure, trip, and post trip—are compared in an attempt to discover elements useful in erecting a predictive model of trip behavior.
Where, in all of this, it might be with some justification asked, is psychogeography, that field studying the perception, cognition, and consequent behavior vis-a-vis the geographic environment? Where indeed? It is not, in bald point of fact, a meaningless question. As was made clear in our original definition of the field, the cognitive portion of the paradigm is not available for study directly, except by neurologists, whose success to date, remarkable as it is, is far from complete. Consequently we are thrown back on expressed behavior in the attempt to learn anything about the cognitive portion of our problem. And this lands us smack-dab in the middle of an embarrassing dilemma, for quite clearly the expressed behavior that we are investigating are the sketch maps themselves. That is, we are forced to make the sketch maps stand proxy for the behavior—the walking and moving through the city itself. It would have been marvelous had we been able to monitor completely the behavior of the kids as expressed in making street-corner decisions about the path to take, about where in Rome they were, and about how to get there from here; it would have been marvelous could we have equipped each kid with some sort of radio transmitter and plotted continuously their paths through the space of Paris; it would have been wonderful if we could have bugged each kid and picked up all the navigationally relevant information that passed between them. Nor, amazingly enough, do I feel that the kids would have objected. It is sometimes startling the things people will do when asked in a human and humane manner. But all these are dreams probably never to be fulfilled and certainly entirely impossible of attainment in the currently austere era of parsimonious social science. It almost seems as though social science has been caught wearing—to adopt the most popular metaphor in all social science—the emperor's new clothes, and as if the taxpayer—or his representative—had cried enough. Nor do I hold a grudge in this instance, for certainly if anyone has been guilty of parading as silk what is in fact only air, then that person has likely been a social scientist.

But this is beside the point. The point is merely that we lack real knowledge about the experiential behavior of the kids except as expressed in the sketch maps and our other instruments, and the dilemma that we face is this: the sketch maps as behavior follow causally from the prior cognitions; but we are postdicting the cognitions from the behavior; and are actually postdicting the perceptions from the already postdicted cognitions. That is, all we have is behavior from which to derive images of cognition and images of perception. Having postdicted these perceptual and cognitive images, we then set them up as explanatory causes by which to explain the expressed behavior. Preposterous you say? Perhaps if we return to our discussion of Santa Claus we may find a way out, if there is a way. If there isn't, perhaps, like the physicist described by Yang who came to acceptable conclusions in the wrong way, we must say, "Hang the
dilema! Full speed ahead!!"

Consider Santa Claus again. Consider the possible ways of knowing that he is. One of these ways of knowing provides us with a crumb and a ring around the glass. Another way provides us with pictures and stories and songs. The first way of knowing we shall call the scientific, though in this particular instance perhaps pre-scientific would be a better word. The second we shall call poetic. Other terms might accomplish the same task, but these will suffice. One might ask whether it is possible to come to different sets of knowledge by following one or the other of these paths. In the case of Santa Claus it would seem that we can. The poetic route has as its destination a Santa Claus who is fat and jolly and dressed in red with white trim and a white beard who lives at the North Pole and spends the year making toys with his elves and who flies around the world in a sled pulled by reindeer on Christmas Eve. The reality of this Santa can be attested to by the Post Office who annually receives a ton of mail addressed to him, and yet it is not necessary to seek proof of this Santa beyond the power of the images we hold of him. The scientific route has as its destination a rather more paltry image, one consisting of a crumb, and a ring around a glass that will be washed away all too soon. Is there any sense to be made of these distinctive approaches?

Consider now the trip to Europe. The poetic route to knowing about this experience was taken in Part II. Whether or not Part II was "poetic" is irrelevant. It followed a poetic route in coming to grips with the trip. It ignored the scientific approach to knowledge, replete with its deductive systems, its rules of evidence. This poetic way resulted in a set of images of the trip, powerful images of the heat, the elation, the anger, the faces and feelings, the people, the situations. Its reality is attested to by its being, and it needs and demands no other attestation. On the other hand, you have read a precis of the nature of the chapters to follow, chapters that will observe the rules of deduction and inference, the rules of evidence dear to the heart of the scientist. Observe that in place of David Abrams, human being, we shall deal with pieces of paper that stand proxy for him; that in place of Marina Giaconda, human being, we shall deal with pieces of paper that stand proxy for her; that in place of sitting on a bus moving through the world on a hot day in July, we shall look at a piece of paper. What will that paper tell us that we don't already know?

To be quite frank, next to nothing.

Then why bother?
There's only one reason that's any good. The two ways of knowing complement one another, not in simple additive fashion where two is better than one, but in such a way that the crumb resonates with the poetic image of Santa, in such a way that the two ways of knowing become one more complex way of knowing, in such a way that the crumb breathes life into Santa as Santa gives the crumb a reason for being. Just as matter, time and space collapse on examination into an event, so poetic and scientific means for knowing collapse into simply knowing, inseparable, meaningless in isolation. We are so much! It seems a shame to sell us so short. We are more than atoms and less than gods at the same time that we are neither, and always both.

The sin, then, is separation, and it has been a sin into which few great artists and few great scientists have ever fallen. The separation between art and science is a function of fear and mediocrity. The simple rules and platitudes of either art or science offer comfort only for the gutless. The mediocre scientist, hiding behind his facade of deductive logic and inferential statistics, never takes his own measure and never wants to; the mediocre artist, hiding behind his facade of metaphor and simile, likewise fails to take his own measure and likewise never wants to. To take his own measure would demand the abandonment of either narrow deadening system, ejecting him violently into the world, trailing clouds of glory hitherto unseen. Unafraid, he would look about him... and see.

The artificial distinctions between art and science, between the subjective and the objective, between knowledge gained through deduction and inference and metaphor and simile, are falling...

They are not falling as the result of scientists getting together with artists to advise them on techniques; they are not falling when artists and scientists get together at Aspen over a bottle of Scotch; they are not falling as a result of new magazines embracing both approaches; they are not falling by being added, mediocrity piled on mediocrity; or being shared, exchanging garbage the one with the other. They are falling as science discovers its limitations, as it looks deeply into the mirror only to find poetry staring back. Two of the crowning achievements of science in this century have been to look as deeply into the mirror as possible: there was seen the incompleteness theorem and the uncertainty principle. These are tributes to two scientists who dare to look, Kurt Goedel and Werner Heisenberg. Of the first James R. Newmann writes:

Goedel set out to show that the axiomatic method which has served mathematics so long and so well has limitations; in particular, that it is impossible
within the framework of even a relatively simple mathematical system—ordinary whole-number arithmetic, for example—to demonstrate the internal consistency (non-contradictoriness) of the system without using principles of inference whose own consistency is as much open to question as that of the principles of the system being tested. In this endeavor he was successful; thus we reach a dead end so far as one of the major branches of mathematical research is concerned. Formal deduction has as its crowning achievement proved its own capacity to make certain formal deductions. In a sense, therefore, formal deduction may be said to have refuted itself (Newman, 1956, 1616).

Goedel's Proof, as the incompleteness theorem is also called, has upset the very roots of the logical system that science has exploited so efficiently for so very long. Needless to say, this is just a little shocking, a wee bit unnerving, sufficiently so that commentators are moved to remark as follows:

None of this is to be construed, however, as an invitation to despair, or as an excuse for mystery mongering. The discovery that there are formally indemonstrable arithmetic truths does not mean that there are truths which are forever incapable of becoming known, or that mystic intuition must replace cogent proof. It does mean that the resources of the human intellect have not been, and cannot be, fully formalized, and that new principles of demonstration forever await invention and discovery...It is an occasion not for dejection because of the limitations of formal deduction but for a renewed appreciation of the powers of creative reason (Nagel and Newman, in Newman, 1956, 1659).

But while Nagel and Newman were energetically not despairing (although probably sweating profusely), Werner Heisenberg was nailing shut the coffin containing the objectivity of the experimental scientist:

This indeterminateness of the picture of the process is a direct result of the indeterminate-
ness of the concept "observation"—it is not possible to decide, other than arbitrarily, what objects are to be considered as part of the observed system and what as part of the observer's apparatus... In the same way it is now profitable to review the fundamental discussions, so important for epistemology, of the difficulty of separating the subjective and objective aspects of the world (Werner Heisenberg in Newman, 1956, 1054-55).

We have already discussed this issue (pages 43-45). We have come full circle. In this document (subjective or objective or neither) I present traces and descriptions (are they any different?) of events (for there is nothing else) in a convenient (the only organizing principle) manner. Period. No truth. No likelihoods. No answers. No explanations. Just convenient bundles with convenient tags.

If it's any help, I do believe in Santa Claus.
CHAPTER 14

Just as a wit defined poverty as the result of pauvrete, one may explain the phenomenon of the lasting fame of Paris, London and Rome in the same way: These cities are famous because they are fameux.

... E. A. GUTKIND
Urban Development in Western Europe: France and Belgium
The first analysis of the maps to be attempted is that pioneered by Kevin Lynch (Lynch, 1960), and subsequently used by a major portion of the herd of researchers that followed. The technique employed was a sort of content analysis.

Content analysis is a rather sacrosanct hammer in the academic tool box. As early as 1952 Berelson had described a field of research that had grown up using this technique (Berelson, 1952). The field was resurveyed by Cartwright a year later (Cartwright, 1953) and exhaustively covered by Pool in Trends in Content Analysis (1959). A content analysis handbook exists (Worth, Holsti, Zaninovich and Zinnes, 1963) and the field has acquired a genuine critic all its own (Stephenson, 1963). Scarcely a week passes without another piece of research appearing in which content analysis has been employed. All the commentators agree that content analysis is performed in order to quantify information that is qualitative. Cartwright has stated that the "fundamental objective of all content analysis is to convert phenomena, i.e., symbolic behavior of people, into scientific data" (Cartwright, 1953, 466). He goes on to say that scientific data must display four characteristics: 1) objectivity and reproducibility, 2) susceptibility to measurement and quantification, 3) significance for systematic theory, either pure or applied, and 4) generalizability. It is on this basis that the popularity of content analysis has flourished. Specific research fields in which content analysis has been employed are numerous and wide-ranging, including literature, movies, language, dreams, folklore, geography, sociology, anthropology and political science.

That content analysis has been, and continues to be, widely used says, of course, absolutely nothing about its validity or interest or significance as a research tool. Quite frankly, its limitations are enormous, but before discussing them it is vital that we understand just exactly what content analysis is and particularly the role it has, and continues to play, in the analysis of map imagery. Specifically, this means discussing the way in which Kevin Lynch used the technique, since his followers have deviated imperceptibly, if at all, from the form in which he originally employed it.

Kevin Lynch in The Image of the City was interested in two things. He was interested in imageability, i.e., the impact of a given urban component upon a person; and legibility, i.e., the degree of order in the relationships between entities of variable imageability. By themselves, these two interests do not require the aid of content analysis. Lynch could have simply assigned values in some systematic way to buildings, streets, squares and so on. But he was further intrigued by the collective public image of these matters. Now, the common man in the street does not
ordinarily assign numerical values to the impact upon himself of a given aspect of the urban environment. When called upon to evaluate such and such a feature, he uses highly qualitative language including liberal sprinklings of "likes" and "dislikes." This descriptive language, as valuable and as beautiful as it may be, manages to violate all of Cartwright's (and most other scientists') characteristics of scientific data. Somehow, in order to make it science, it has been felt necessary to convert this highly qualitative language of the common man in the streets to hard numbers.

The way Lynch did it was this. He asked a question such as "Tell us about the places in town that you like best," and pooled all the answers he received. From this pool of information Lynch extracted the relevant content — which meant only the places mentioned by the respondents. In other words, "relevant content" turns out to mean nothing more than "quantifiable content." To each of the places mentioned would be assigned a figure representing the frequency with which each place had been mentioned, that is, the percentage of people mentioning each place. Thus, if 10 of 100 people, mentioned a certain place, that place would have a frequency of mention of 10%. All the places mentioned would then be ranked in order by frequency, and classes would be formulated. These classes might be tailored to fit each individual list, to show the information to best advantage, or might be general, to insure comparability between many lists. Lynch set up four classes to handle his lists: 1) 75% and over; 2) 50-74%; 3) 25-49%; 4) 12.5-24%. In this report we have used the same class intervals to insure comparability to the bulk of mental map research. Earlier efforts of my own and others have used a fifth class (5-12.5%) to handle larger samples than those collected by Lynch. Some researchers have used tailored class intervals. Their results are difficult to compare with the results of others and hence verge on uselessness.

Lynch then classified the places mentioned into five intuitively derived types of urban elements: landmarks, nodes, districts, paths and edges. Due to the nature of our mapping system we have ignored Lynch's intuitive types and classified our material into point, line and area phenomena. (Furthermore, there exist a wide variety of intuitively generated typologies of urban phenomena, many of them far richer and more useful than Lynch's. See for example, Cullen, 1961; Wolfe, 1966). Thus Lynch's data was broken down into twenty compartments, five types of urban elements by four class intervals. Ours is broken into twelve compartments, three types of urban elements by four class intervals. Each of Lynch's twenty compartments was then assigned a particular symbol, and these symbols were placed on a standard map of the city in question. We have followed this procedure.
Figure 14.0  First London map: Lana Monroe
Figure 14.1  A Group K map of London
Lynch's data was at the outset verbal. The content analysis and Lynchian mapping technique are very efficient when dealing with verbal material for two reasons. First, the list of words contains no data concerning the relative spatial location of the places listed. Thus there is no reason to suppose that their intended location is anything but veridical, and hence no reason not to map these places where they occur on a standard base map. Second, the information about the city comes to the investigator as information cast in a highly reductionistic symbolic system. All the investigator does is treat each listed place as a place, assign it a frequency of mention and his work is done.

It is, however, impossible to justify the use of this simplistic technique for graphic (i.e., sketch maps) responses. In regard to the first point made in the preceding paragraph, graphic responses do contain information about the relative spatial location of the places portrayed, and thus there is no justification for mapping the responses on a standard base map. Further, the information portrayed in a graphic response is not necessarily presented in a simple reductionistic symbol system. Nonetheless, this is exactly what Lynch did, and what continues to be done. As this point may not be luminously clear, I shall pursue it.

Turn your attention to Figure 14.0. This is the first map of London drawn by Lana Monroe using the point-line-area method (without the tracing paper overlay information). On it you see a variety of points and lines, some names and some not. "HP," for instance, stands for Hughes Parry Hall, "S.P." for St. Pancras Station, "E.S." for Euston Street and so on. Try to apply Lynch's technique to this map and you face a horrendous question scarcely raised, if at all, by the verbal information. Just what is the content of this map?

Some is obvious. All of the points and lines with associated tags may be treated as if verbal information and easily extracted, listed, and frequencized. If the investigator is sufficiently familiar with the environment portrayed, he can make guesses about untagged items and be right. For instance, line #6 must certainly be Cartwright Gardens. I can say this because I know the location of Hughes Parry Hall and can intuit the name of the street on which it is located. I also happen to know this because Lana told me so on the trip to Rome, and because I noted this on the back of the map. I could have guessed and been wrong, (as I was wrong regarding the identification of "L.Z." which for some reason so effectively evoked the image of Liz Taylor for me that I never thought of London Zoo). What does the investigator do with places obscurely identified, or not identified at all? Ignore them? I see no other serious option, and yet that is hardly a responsible attitude to take. Furthermore, from the examinations of thousands of sketch maps, in my own research
and the research of others, I can say without fear of contradiction that the majority of them contain less identifying information than is found in Figure 14.0.

Sad to say, this barely scratches the surface of the problem. What about the rest of the content of Figure 14.0? For example, the relative location of the various points and lines. Is this not part of the content as well? Of course it is, and yet our simple verbalistic technique cannot deal with it. Not only is the location of places ignored, but so is the density of their occurrence. Note that Lana has connected most of the points in the vicinity of Euston Street and that most of the points and lines are found in this vicinity. On the other hand, note that the rest of the space is occupied by no more than seven points and lines, and that these are scattered, unconnected. This is valuable map content which must remain unnoted. Again, the fact that there are three enclosed areas on the map will also go unrecorded. And so on. The amount of content that content analysis cannot deal with is immense.

Now consider Figure 14.1. Here's another problem. This map was produced by a student in Group K who had no exposure to the point-line-area system of mapping, although she claims this is not the first time she has drawn a map. The question I wish to raise is whether she has drawn streets or blocks or both or neither? On the face of it, this may appear an absurd question, but a brief analysis will show that it is not. I have added capital letters to her map running from A to I to help us out. Take the enclosed areas lettered A and B. Both of these are named, A being Trafalgar Square, and B being Piccadilly Circus. Heading away from Piccadilly to the Thames is a pair of double lines labeled Oxford Street. This is positive evidence that she has drawn both blocks and streets. In point of fact in London, the street-enclosed area of Piccadilly Circus (B) is just large enough to park your fanny on and the enclosed area of Trafalgar Square (A) is only slightly larger. Armed with this information we turn next to the area labeled H. Is it legitimate to regard this area in the same way that we regard areas A and B? No. Note the location of St. Paul’s. Between St. Paul’s and Trafalgar Square there is more than a mile of London chaos. If A is indeed intended to represent Trafalgar Square, H can represent no known block or set of blocks. Then what is it? Who knows? I maintain that nobody knows, not even she who drew the map, on the following grounds. The mapper in this case is concerned with the representation of places she knows in London. She is aware that these places are connected by a network of streets because she traveled on them. She has opted to represent streets in a pictorial fashion and has consequently chosen to use parallel lines. It is impossible to draw a network of any connectivity using such a symbol for streets without producing—in the attempt to draw streets—sets of enclosed space. That is, I maintain that
Figure 14.2  A Group K map of London
the block-like enclosures (such as H) are a consequence of the choice of
the line symbol and are intended in all but cases A and B to represent
nothing at all. They are, in effect, space fillers, not blocks.

It would be equally easy to reverse the argument from blocks
to streets to show that she had drawn blocks and that her choice of area
symbols resulted inadvertently in the production of streets. In this
particular instance it would be slightly more difficult since I believe that
probability is in favor of my first explanation, but it would not be
impossible. Faced with area E for example, either explanation could
easily hold. In other words, due to the ambiguity of the symbol systems
employed by the average sketch mapper, the analyst is faced with additional,
almost insurmountable, problems. The utilization of a standard symbol
system such as the point-line-area approach obviates many of these issues.
The manner in which it does this is easily explained, first by reference to
Figure 14.1 and then by reference to Figures 14.2-14.5. The question of
what is an area and what is a line that bothered us in Figure 14.1 would
never appear on a map drawn according to our specifications, since
areas appear on a separate sheet of paper. Thus, had our mapper wished
to indicate an awareness of areas C through I on Figure 14.1, she would
have drawn them on the tracing paper overlay. But let's take a look at a
couple of other Group K maps.

Figures 14.2 and 14.3 are not atypical of Group K maps. They
are most typical in the variety of symbols employed. I have not attempted
a count of the total number of symbols generated by Group K for identical
items such as streets, but the number is simply enormous. A hint of this
may be felt by noting the fact that, symbolically speaking, Figure 14.2 is
in an altogether different world from Figure 14.3. On the one hand we have
a highly schematic though thoroughly ambiguous set of symbols, most of
which are tagged. Red meat for the content analyst, locational problems
aside. On the other, we are faced with an almost completely pictorial
representation involving four trees, a tennis court, two houses, a blacktop
that is really a blacktop and then...a rather wild attempt at portraying
apartment buildings. Does the analyst note: trees, 4 mentions? And what
does he do with those "apartments?" I was once in the position of using such
disparate data (Wood, 1971) and I will simply say that it was rough sledding.
Frankly, I feel that the maps speak for themselves and consequently I turn
to a pair of Group L maps.

Figures 14.4 and 14.5 were pulled from the pile of Group L
maps with my eyes closed. Janine Eber drew Figure 14.4 while Leslie
Casyk drew Figure 14.5. (In neither case have we reproduced the tracing
paper overlay.) Janine Eber has followed the rules for producing maps
using the point-line-area method, except that she has failed to number all
her lines. Otherwise linear phenomena such as the Thames, streets and bridges are represented by simple lines, and places are represented by points. The symbols are entirely unambiguous. Almost all of them are labeled. Leslie Casyk has followed the rules less particularly and yet comparability is high. There are three basic violations of the rules on Leslie's map: 1) She has included areas on the skeleton. Fortunately, she has also drawn these on the tracing paper overlay. 2) She has been unable to resist the temptation to draw a fat Thames. I participated in these mapping sessions and can speak to the difficulty of tracing that huge river with a single thin line. An alternative on our part might have been to characterize the river as an area, and yet I feel that this might have occasioned even greater conceptual difficulties. 3) Since her river is so fat, she has felt a corresponding urge to give substance to the bridges crossing it. Nonetheless, her violation of the mapping vocabulary has led to no ambiguity at all. Comparison of the Group L and Group K maps is exciting. The difference between the two L maps is slight; the difference between the two K maps is enormous. From the investigator's point of view, the L maps are more meaningful because they are more easily compared.

Criticism of the L maps might note that in the process of standardization, valuable differential information has been sacrificed. Thus, it is possible to readily distinguish types of mappers in the K sample. In Group L, this task will be more difficult. My response to this criticism is three-fold: 1) There are sufficient differences between the maps of Leslie Casyk and Janine Eber to separate the two girls into distinct classes of mappers. These differences will be subsequently examined, but at this point I will simply point to the varying degree of connectivity on the two maps, the varying number of places and lines represented on the two maps, and the significant variations in relative locations of the features the maps have in common; that is, despite the process of standardization, individual mapping differences are clear. 2) My second point deals with the nature of our research objective. We were concerned with the nature of the urban-individual interaction. It would be impossible for me to say anything about the relation between London and the girl producing Figure 14.3, because her map is difficult to interpret, and because it is most emphatically not a map of London. We have willingly and intentionally sacrificed some individuality to achieve our goals of understanding urban-individual interaction and of teaching certain basics about mapping and observing. 3) In the larger context of Project Group L it must be clear that we have an abundance of information about individuals that is unusual in studies of sketch maps. Thus, were it not possible to distinguish meaningfully among the Group L kids on the basis of the maps, it would be possible to do so utilizing other information. These three points must answer any criticism leveled at the lack of
Figure 14.3 A Group K map of London
Figure 14.4  First London map: Janine Eber
differentiation between the more or less standardized products of Group L.
It might, in fact, be suggested that due to the lack of standardization in
the Group K sample, and in all populations drawing instructionless sketch
maps, inter-map differences have been exaggerated beyond the differences
between the mappers themselves.

In Table 14.0 I have summarized the reasons that make the job of
content analysis easier using maps drawn according to the point-line-
area method.

<table>
<thead>
<tr>
<th>Instructionless Maps</th>
<th>Point-Line-Area Maps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Symbolically ambiguous</td>
<td>1. Symbolically unambiguous</td>
</tr>
<tr>
<td>2. Often lacking verbal tags</td>
<td>2. Seldom lacking verbal tags</td>
</tr>
<tr>
<td>3. Are scarcely comparable</td>
<td>3. Are comparable</td>
</tr>
</tbody>
</table>

Can there be any question as to the way in which the content
analysis was performed on the Group L maps? Since almost all points
and lines and areas had associated verbal tags, since the symbol system
was unambiguous, since the maps were comparable, it was a matter of
little effort to extract the ostensible content from the maps. In keeping
with the Lynchian approach, locational and other purely graphic information
was ignored and subsequently dealt with. Using maps such as the Group L
maps makes content analysis a reliable tool within its own peculiar
limitations.

This was, however, not the case with the Group K maps. In
this instance I was thrown back upon the rules of procedure utilized in my
earlier work. An exhaustive discussion of these rules is provided in
Fleeting Glimpses (Wood, 1971, 66-69). Here they will be briefly
summarized. First of all, each piece of identifiable information has been
extracted. In the case of Figure 14.3, for example, seven classes of
information have been extracted: 1) Hughes Parry Hall, 2) Commonwealth
Hall, 3) Street (counted as Cartwright Gardens), 4) Tennis Court, 5) Trees,
6) Park, 7) Apartments. Each class received credit for a single mention
with the exception of the trees which received credit for four mentions.
Due to the ambiguity of the "apartments" symbol, I was only able to give
this class a single credit. In the case of Figure 14.2 I was able to create
24 classes of information, counting the "five stops in between" as a single
mention of a subway route since they were described generically, rather
than specifically. Some changes were made in nomenclature. Thus the Ring Road became Euston Street. A problem was posed by the identification of the circle labeled "Westminster Cathedral Abbey." There is a Westminster Cathedral and a Westminster Abbey, though the Abbey is near the Houses of Parliament and the Cathedral near Victoria Station. Both were widely visited by both Group L and Group K. Due to the lucid ambiguity of the relative location on this figure of Parliament and Victoria Station, I decided to flip a coin. The Abbey won. The second major decision was not to count areas and streets unless named. Thus in the case of Figure 14.1, only named places and streets were extracted as usable content. It might be argued that I could have clearly counted Euston Street (on which King's Cross and St. Pancras are to be found) or The Mall (connecting Trafalgar Square with Buckingham Palace) but these would have been guesses no matter how apparently reliable, and the rule not to count unnamed streets and areas was followed without exception. As we shall see when we examine the results of the content analysis for the Group K maps, much of this is academic since problems of this sort arose on few maps.

But no matter how amenable the data is to content analysis, content analysis can only do so much. At this point, I wish to examine just what it is that content analysis cannot accomplish. There are four basic criticisms that can be leveled against content analysis: 1) it is reductionistic; 2) it ignores the unique; 3) it ignores associations between categories; 4) it cannot extract information where it is not looking. Each criticism will be examined briefly below.

1) Content Analysis is Reductionistic. This means that a large body of material is compressed into relatively few categories. In our case, the environment of London is compressed into twelve categories, a preposterously small number. While this is a great advantage for clear analysis, inherent in the process is a severe loss of information. The investigator must decide whether the loss of information is offset by the gain in clarity. If content analysis is the only tool being used, the answer is a simple NO. The loss of information is so severe as to turn your clear analysis into an analysis of nothing. And a clear analysis of nothing is nothing at all. In this report the role of content analysis is circumscribed.

2) Content Analysis Ignores the Unique. There are two aspects to this criticism. The first is that any single response is buried in a mass of others. This criticism may be obviated by spotlighting unique individual responses and also by noting that the goal of the analysis is to derive a "public" image, which by nature subsumes individual images. The second aspect of this criticism is slightly more devastating and was originated by Alexander George (George, 1959, 7-32) who pointed out that an event which
occurs only once may be of greater importance than an event which occurs
many times. In other words, frequency of mention may not be a function
of image impact. There is no simple refutation of this criticism and since
its roots are tediously buried in the method and ethics of science in general,
I will not discuss it further. Simply note, that if the criticism has validity,
content analysis has none.

3) Content Analysis Ignores Associations Between Categories.
That this is true is up to the individual investigator. Contingency analysis,
own ordinarily a part of any content analysis, establishes that two items
are found together more or less frequently than would be expected by chance.
However, contingency analysis is wide open to the Georgian criticism, and
in any event postulates no necessary or causal relationship between
"contiguous" items.

4) Content Analysis Cannot Extract Information Where It's Not
Looking. This may sound absolutely ludicrous, but in point of fact may
constitute one of the two most serious criticisms to be leveled against
content analysis. An example of this may be provided by an unpublished
study I made in 1968 in which I attempted to derive the Easterner's image
of the Far West at the turn of the century by performing a content analysis
on forty Dime Novels. Since I was searching for the physical image of the
Far West my categories of extraction, which were empirically derived,
related solely to the physical elements (physical in the geographic sense,
as opposed to cultural) of the environment. In all, I collected 6,180
landscape cues which were divided into 156 categories, such as rocks,
trees, mountains, woods, storms, rains and so on. These were ranked
by frequency et cetera as described above and an image of the Far West
as found in the Dime Novels was articulated.

Irked by the three criticisms of content analysis that I have
mentioned above, i.e. its reductionism, its inability to encompass the
unique, and its limited ability to evaluate associations between categories,
I performed another study. A short section of a Dime Novel was read
orally to a group of 28 students at Clark University. This passage was
entirely devoid of physical landscape cues. On the basis of this passage,
which described the rescue of a white maiden from the clutches of a group
of Indians, the students were asked to describe the environment. A full
96% of the students described a plains environment. On the other hand,
only 9% of the 6,180 landscape cues in the 40 Dime Novels themselves
involved plains imagery. Obviously, something was wrong somewhere.
An example of the students' reasoning is relevant:

"This is a cowboy and indian story and so by
convention it takes place in the wild West.
The area is flat low lying plain with little or no obstruction. Encamped on a section of this plain are hundreds of tee pees (indian houses)."

Another example shows the relevance of landscape elements not mentioned:

"Obviously mid-western Indians. Tee-pees indicate an environment with fairly favorable temperature precluding the necessity of better shelters. No mention of trees or Nick hiding in the forest so we assume that it is a grass-lands or semi-desert (sage brush). The chase tends to intimate a flat or slightly rolling land form. Horses mean enough grazing land. Water available for animals." 

The point is not that the students reasoned well or poorly, but that they conjured up fairly complete images of the landscape of a region that was not explicitly described. Key elements in their constructions were horses, tee-pees, Indians, none of them elements of the physical landscape. In a general sense the question becomes, how much of an image can be seen as being sui generis within the actions or even the title of the book alone? For urban image analysts the question becomes, now much of the image of the city can be seen as being sui generis within the word alone? Having discovered the impact of the word tee-pee, I could count the number of times tee-pee was mentioned, knowing that that word was capable of evoking landscape images. How does one discover which words that are apparently not descriptions of the city, are in fact descriptions of the city? How, in other words, can content analysis be utilized to extract information relevant to the research objective in areas where it is not looking? I don't imagine that the question sounds so funny any more. It doesn't sound funny to me, but then I don't have the answer.

Despite the obvious multitude of criticisms that can be leveled against content analysis, it has a role. It can, in a systematic fashion, reduce a great deal to a very little. As long as we do not exalt that word "systematic" into a god, we're on firm ground, neither mystically scientific nor scientifically mystic. With the exception of eight reproductions of actual sketch maps, the balance of the figures in this chapter display the results of a content analysis performed on fifteen sets of data. Of these fifteen sets, two consist of verbal lists generated in response to a question, and thirteen consist of collections of maps. Let me briefly
Figure 14.5  First London map:  Leslie Casyk
recapitulate what we've done to achieve these results. 1) For each data set a list is made containing every place listed or mapped. 2) Against each place on this list is noted the number of times this particular place was mentioned. 3) Dividing the number of mentions by the number of respondents results in a figure called the frequency of mention, expressed as a percentage of the number of respondents. 4) All the listed places are ranked according to the frequency of mention. 5) This list is divided into four classes: 12.5-24%, 24-50%, 50-74%, and over 74% frequency of mention. On occasion, when a particular item was mentioned more than once per map, a figure greater than 100% results. The places mentioned less than 12.5% of the time are ignored in the mapped results, though they are considered elsewhere. On occasions, items mentioned less frequently than 25% or even 50% of the time are dropped from consideration when the sample is too small. 6) This list is further divided into point, line and area phenomena, resulting in twelve distinct compartments. 7) Each compartment is assigned a symbol. 8) The results are located on a standard base map of the city in question. These results will be discussed below in five separate sections. First we deal with a comparison of the London maps produced by Groups K and L, then exhaustively with the Group L London maps. Next we compare the K and L maps of Rome, and then treat the L maps of Rome. Finally, we attack the L maps of Paris.

III

To begin, compare Figures 14.6 and 14.7. These two figures show the analysis of lists generated in response to the question "Where have you been, what have you seen while in London?" The question was put to both Group L and Group K during the same hour on 6 July, or after five and a half days in London. Figure 14.6 displays the result of the Group K analysis (n=43) while Figure 14.7 displays the results of the Group L analysis (n=34). The figures are practically identical. Mentioned by more than 12.5% of Group K were 17 points, 4 lines, and 2 areas; by more than 12.5% of Group L were 16 points, 4 lines and a single area. Quantitatively these results are similar, but the similarity is more than quantitative. The places mentioned by both groups are practically the same, and in many cases similar places have been mentioned with similar frequencies. We may point to the Tower of London, Tower Bridge, the Thames, Parliament, Big Ben, Buckingham Palace, Hyde Park, the Senate House of the University of London, and the British Museum—all mentioned by both groups within the same frequency interval. Mentioned in common with no more than a single frequency class difference were Westminster Abbey, Trafalgar Square, Piccadilly Circus, Oxford Circus, Carnaby Street, and Madame Tussaud's. The remaining places were not mentioned in common: Westminster Cathedral, a theater on Shaftesbury Avenue, Oxford Street, Russell Square, London Bridge, and the GPO Tower (all mentioned by
Group L but not by Group K); and Victoria Station, the Planetarium, Hughes Parry Hall, St. Pancras Station, King's Cross Station and Regent's Park (all mentioned by Group K but not by Group L). That is, the two groups mentioned 15 things in common and 12 things not in common. Let us reduce the significance of the uncommonly mentioned things. Note that the Planetarium and Madame Tussaud's are adjacent; note the proximity of London and Tower Bridges; note the proximity of Westminster Cathedral and Victoria Station. Each item in these proximate pairs is sufficient evidence of the fact of a visit to the other. Removing the four uncommonly mentioned items in the foregoing three pairs allows us to reduce the list of uncommonly mentioned items to eight. Now note that three of the places mentioned exclusively by Group K include the girl's dorm itself and two structures (the two stations) encountered daily by virtue of the nearby tube entrance. Obviously, Group L experienced these places as well. With these places discounted only five uncommon items remain. One of these, St. Paul's, was an item on the itinerary of the first full day's tour that Group L was forced to forego by virtue of its late start. Visits to St. Paul's had to be made by Group L on their free-time. For the remaining four uncommonly mentioned items I have no real explanation, except for the fact that the groups were not identical.

With these caveats entered, I submit Figures 14.6 and 14.7 as evidence of two things: 1) that the experiences of London were substantially the same for Groups L and K, and 2) that they were perceived by the kids in Groups L and K as being substantially similar. Perhaps my discussion of the points of similarity and difference tended to exaggerate the differences. If you feel this to be the case, look over the two figures once again before proceeding.

Now, I turn your attention to Figures 14.8 and 14.9. These display the results of a content analysis of the sketch maps produced by Group L and Group K. Figure 14.8 shows the analysis of the Group K maps (n-43) produced immediately following the generation of the list analyzed above. Figure 14.9 shows the results of the analysis of the first Group L map, produced two days earlier than either the generation of the Group L list (discussed above) or either of the Group K products. That is, the Group L maps were produced with less experience of London. Under these disparate conditions, perhaps it is not surprising that the figures should show some differences. If so, it is all the more surprising that the differences should be such as they are and in such magnitude.

The figures are entirely distinct. The Group K map shows 31 points, 23 of them within a third of a mile of the dorms. The Group L map shows 32 points, only 10 of them within one-third mile of the dorm. Turning to the lines, the Group K map shows only four lines, two of which are
Legend for Content Analysis Maps
Figure 14.6  Where Group K went (n=43)
proximate to the dorms. The Group L map shows 10 lines, only one of which is proximate to the dorms. In the matter of areas, the Group K map shows a single area, while the Group L map shows twelve. That is, Group K has drawn fewer items, nearer the dorms, than has Group L, which has drawn more items scattered over the whole of London. The maps are drastically and amazingly different.

An explanation of this difference might be sought in 1) experience of vastly different nature between the groups; 2) perceived differences of experience between the two groups; 3) some other difference. If Figures 14.6 and 14.7 were not sufficient, it can be stated in general terms that the experiences of both groups were technically identical. That is, theoretically Group K and Group L went to the same places in the same order and at the same times by virtue of the tour itinerary. As we well know, this was true only in theory, and yet the deviations were never great. Thus, we missed St. Paul's on the tour and failed to penetrate the interior of Westminster Abbey, but otherwise underwent similar experiences. Serious deviations can occur during the students' free time, and yet, given the general nature of the tour, such deviation is highly unlikely. Thus, for example, a great deal of free time was spent by both groups shopping on Carnaby Street, visiting Madame Tussaud's and so on. Hence, the explanation of the differences between Figures 14.8 and 14.9 must be sought elsewhere.

The maps displayed as Figures 14.6 and 14.7 show quite clearly that the perceived difference between the experiences of the two groups was not great. If it was not in life identical, it was not perceived as identical either. And yet, though the figures are not identical, they certainly are sufficiently similar to be incapable of providing an explanation of the differences between Figures 14.8 and 14.9. Compare the first pair with the second and you will see what I mean. (It might be noted that in both K figures, there are more places located near the dorms, although the difference between the K List and the K Maps remains striking.)

Consequently, we must look for an explanation of the differences still further afield, and for all of that, I don't think we need to look too far, for clearly, there was one major distinction between Group K and Group L: that Group K had not participated in the pre-departure phase of Project Group L, was not anticipating map drawing exercises, had not fooled around with the point-line-area method of mapping, did not carry around the Environmental A handbook, and so on. The obvious explanation of the differences between the content of the K and L sketch maps is that the kids in Group L had, to one degree or another, mapping on the mind, and, to one degree or another, were, in point of fact, talking with maps.
I have plunged into this discussion with a glance at the results of the content analysis because the evidence, clearly laid out before you, is dramatic, decisive, and from my point of view needs no further argument. However, there are those who would wish to see the evidence displayed in other formats and to their demands I now turn.

* * *

The evidence from the content analysis that has been mapped does not, of course, include all the quantitative information extracted from the sketch maps. For example, only those places mentioned by 12.5% or more of the responding populations have been mapped. Thus, there is no way of knowing from an examination of the maps anything about the total numbers of places mentioned, nor the total number of times these places were mentioned. There is a further complication that cries out for explication: the issue of the role played by the List of Places that Group L had first seen while engaged in the Predictive Morphology of London. (This List of Places may be reviewed on page 94.) With these concerns in mind we turn to an examination of a pair of tables providing another view of the results displayed in Figures 14.6 through 14.9.

Before we look at them, however, I must explain the difference between the terms "item" and "instance" as used on the tables and throughout this discussion. The number of "items" refers to the number of distinct places, such as the Tower of London, the GPO Tower, that were listed or drawn on the maps. The number of "instances" refers to the total number of times the "items" in question were mentioned. Thus, the Tower of London might have been mentioned fourteen times. This counts as one item and fourteen instances. Not displayed is the number of instances per individual item. This information can be found on Figures 14.6 through 14.9. Here we show only the total number of instances for the total number of items. Thus Group L listed 66 places 347 times, or gave 347 instances of 66 items. I should also point out the meaning of "on List" and "off List." When you find on the Table the remark "23 Items on List" it means that 23 of the items generated can be found on the List of Places given to Group L. On the other hand, "23 Items not on List" means that this number of items is not to be found on the List of Places given to Group L. Such items came all unaided from the heads and experiences of the kids themselves. Since these figures will prove crucial in unmasking the role played by the List of Places, I'd observe them with care.
TABLE 14.0

CONTENT ANALYSIS OF GROUP L (n-34) AND GROUP K (n-43) LISTS OF PLACES VISITED

<table>
<thead>
<tr>
<th>GROUP L</th>
<th></th>
<th>GROUP K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Items</td>
<td>66</td>
<td>Total Items</td>
</tr>
<tr>
<td>Total Instances</td>
<td>347</td>
<td>Total Instances</td>
</tr>
<tr>
<td>Points</td>
<td></td>
<td>Points</td>
</tr>
<tr>
<td>Items</td>
<td>46</td>
<td>Items</td>
</tr>
<tr>
<td>Instances</td>
<td>347</td>
<td>Instances</td>
</tr>
<tr>
<td>Items on List</td>
<td>23</td>
<td>Items on List</td>
</tr>
<tr>
<td>Items not on List</td>
<td>23</td>
<td>Items not on List</td>
</tr>
<tr>
<td>Instances on List</td>
<td>175</td>
<td>Instances on List</td>
</tr>
<tr>
<td>Instances not on List</td>
<td>85</td>
<td>Instances not on List</td>
</tr>
<tr>
<td>Lines</td>
<td></td>
<td>Lines</td>
</tr>
<tr>
<td>Items</td>
<td>12</td>
<td>Items</td>
</tr>
<tr>
<td>Instances</td>
<td>57</td>
<td>Instances</td>
</tr>
<tr>
<td>Items on List</td>
<td>10</td>
<td>Items on List</td>
</tr>
<tr>
<td>Items not on List</td>
<td>2</td>
<td>Items not on List</td>
</tr>
<tr>
<td>Instances on List</td>
<td>54</td>
<td>Instances on List</td>
</tr>
<tr>
<td>Instances not on List</td>
<td>3</td>
<td>Instances not on List</td>
</tr>
<tr>
<td>Areas</td>
<td></td>
<td>Areas</td>
</tr>
<tr>
<td>Items</td>
<td>8</td>
<td>Items</td>
</tr>
<tr>
<td>Instances</td>
<td>30</td>
<td>Instances</td>
</tr>
<tr>
<td>Items on List</td>
<td>7</td>
<td>Items on List</td>
</tr>
<tr>
<td>Items not on List</td>
<td>1</td>
<td>Items not on List</td>
</tr>
<tr>
<td>Instances on List</td>
<td>11</td>
<td>Instances on List</td>
</tr>
<tr>
<td>Instances not on List</td>
<td>19</td>
<td>Instances not on List</td>
</tr>
</tbody>
</table>

As might be expected from the fact that Group K is nearly a quarter again as large as Group L, the total number of items and instances generated in the list context is greater for Group K. Since this is your first acquaintance with such a table, let me give you a tour, pointing out the highlights. First of all notice the decrease in total numbers as we go from points to lines to areas. In other words, in this verbal instance, the kids could name far more points than lines and more lines than areas. This is just what we should have expected. To understand the normalcy of this, pick a city and try to list as many point, line and area phenomena
as possible. You will readily see that you know more points than lines and more lines than areas. This also makes rational, as well as experienced, sense, for as areas are composed of lines (geometrically speaking) so lines are composed of points. It only makes sense that such a hierarchy should obtain, and I shall herewith cease to prate about it, only requesting that you notice how this fact holds for all the tables of the content analysis that we shall have occasion to see.

Now turn to the relationship between items and instances in regard to their being "on list" or "off list". Take the Group L points. Forty-six point items were mentioned in all. Of these, 23 appear on our List and 23 don't. It is, however, easy to distinguish between these two sets of 23, for the 23 items that do appear on our List generate 175 instances, while the 23 that do not appear on our List generated less than half as many. This is to say, that the "on list" items were mentioned by more kids than the "off list," or, that the unlisted items probably include those places discovered or remarked idiosyncratically by individual kids, items probably not part of the ordinary tour itinerary, items probably not hitherto known through the mediums of TV and magazines. "Off list" items are not sights or tourist attractions, but more likely of the nature of important or striking orienting and navigational and functional cues. Examples of these are subway entrances (particularly those at Russell Square and King's Cross), American style eateries, pubs, buildings under construction, distinctive apartment complexes, the dormitories themselves and so on. The reason they were excluded from our List of Places must be obvious. They are locally important in the first place, and were likely as unknown to Bob or me prior to arrival as to the kids. (Certainly they never appeared on the National Geographic Society map of London!)

So the first thing we want to note about "off list" places is that that are likely highly local in character, and unlikely of interest beyond an individual or small group. Note that the local character of Group K's interests that shows up on the sketch maps, is already prefigured here in the greater number of "off list" items and instances (in all but one case, where the number is the same for both groups). But now note, that although no one in Group K ever saw the List of Places, they were capable of mentioning nearly as many of the "on list" places as Group L was. Thus Group L mentions 40 listed items and Group K mentions 32. In terms of instances, Group L mentions its "on list" items 240 times, while Group K mentions its "on list" items 281 times. In other words, Group K was clearly not at a disadvantage in this listing operation by virtue of not having previously used the List of Places. If anything, it seems to have hindered Group L's ability to come up with names. None of this should be surprising, given the fact that neither group used the List of Places in creating their lists of places visited, and that both groups had highly
similar experiences in London.

However, the situation is wholly different when it comes to the content analysis of the sketch maps as Table 14.1 shows.

**TABLE 14.1**

CONTENT ANALYSIS OF THE FIRST MAPS OF GROUP L (n=34) AND THE MAPS OF GROUP K (n=43)

<table>
<thead>
<tr>
<th>GROUP L</th>
<th>GROUP K</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Items</strong></td>
<td>176</td>
</tr>
<tr>
<td><strong>Total Instances</strong></td>
<td>839</td>
</tr>
<tr>
<td><strong>Points</strong></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>84</td>
</tr>
<tr>
<td>Instances</td>
<td>455</td>
</tr>
<tr>
<td>Items on List</td>
<td>37</td>
</tr>
<tr>
<td>Items not on List</td>
<td>47</td>
</tr>
<tr>
<td>Instances on List</td>
<td>331</td>
</tr>
<tr>
<td>Instances not on List</td>
<td>124</td>
</tr>
<tr>
<td><strong>Lines</strong></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>50</td>
</tr>
<tr>
<td>Instances</td>
<td>211</td>
</tr>
<tr>
<td>Items on List</td>
<td>23</td>
</tr>
<tr>
<td>Items not on List</td>
<td>27</td>
</tr>
<tr>
<td>Instances on List</td>
<td>126</td>
</tr>
<tr>
<td>Instances not on List</td>
<td>75</td>
</tr>
<tr>
<td><strong>Areas</strong></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>42</td>
</tr>
<tr>
<td>Instances</td>
<td>173</td>
</tr>
<tr>
<td>Items on List</td>
<td>20</td>
</tr>
<tr>
<td>Items not on List</td>
<td>22</td>
</tr>
<tr>
<td>Instances on List</td>
<td>89</td>
</tr>
<tr>
<td>Instances not on List</td>
<td>84</td>
</tr>
</tbody>
</table>

First of all, note the decrease in items mapped as we move from points to lines to areas, but note especially that the decrease is far more drastic in the case of K than it is for L. Group K maps more points than L, half as many lines, and less than a quarter as many areas. This
difference can clearly be attributed to the emphasis placed on lines and areas in the Environmental A mapping system, which leads to a more balanced view of the composition of space. But even as K maps more points, note that the bulk of these are "off list," and that the bulk of the L items are "on list." Ditto for the instances. Most of the K points are local. Most of the L's are scattered all over London. Most of the K lines are local (off list), while most of the L lines are of more general interest (on list). The situation is reversed for areas. This is understandable given the fact that the Environmental A mapping system primed the eyes of the L kids for areas and the fact that the number of areas on the List of Places is paltry to say the least. But paltry as they are, they are also the famous obvious areas: Regent's Park, Hyde Park, the East End, the West End and so on. It is these obvious, famous, areas that Group K latched onto. The third thing worth noting about this table is that despite the fact that Group L consisted of fewer kids, it generated more items and instances, reversing the normal order of things.

Comparison shows that the Environmental A mapping system had little effect on the generation of verbal information, although certain spinoffs were being felt simply by virtue of being part of Project Group L. When it comes to drawing maps the effects of the Environmental A mapping system are immediately apparent and quite overwhelming. Three aspects of this effect can now be isolated. 1) The Group L kids had a more balanced conglomeration of points, lines and areas, as opposed to the point-heavy view of Group K; 2) The points, lines and areas mapped were of London-wide significance, as opposed to the local, personal significance of the K places; 3) Group L mapped more places and with far greater consensuality.

The second point mentioned above, that the K places were local, the L places London-wide, may need further elucidation. To this end I have prepared a further series of tables that examines the places mapped in terms of distance from the dorms. The space of London has been divided into three envelopes. In the smallest envelope we find Cartwright Gardens, any mention of the four residence halls (Hughes Parry, Commonwealth, Bentham, and Canterbury—there were others, but not mentioned), the hotels surrounding the gardens (small, private hotels), the gardens themselves, the tennis court, and the four streets immediately incident to the gardens (Marbledon, Marchmont, Leigh and Hastings), but excluding any shops and so on that might appear on these streets beyond the Gardens proper. These are included in the next larger envelope.

This larger envelope included everything beyond Cartwright Gardens but within a 1/3 mile radius, including Gower Street at Euston Road, Euston Square, Euston Station, St. Pancras Station, King's Cross
Station, Gray's Inn Road, Guilford Street, Russell Square, all of London University on or within Gower Street and so on. Everything outside this circle comprises the outermost envelope, as long as it is in greater London. Thus we exclude Oxford, Stratford-on-Avon, Bladon and so on.

The inner envelope is entirely and exclusively visible from the doors of the residence halls; the middle envelope is within a five-or-six minute walk of the residence halls; the space of the outer envelope is bus and subway space. The percentages on the following tables refer to the percent of the points, lines, or areas on either the list or the sketch maps, in the given envelope. I think the tables are self-evident.

**TABLE 14.2**

PERCENTAGES OF POINTS, LINES AND AREAS LISTED AND MAPPED BY GROUPS L AND K FOR SPACE ENVELOPE: CARTWRIGHT GARDENS

<table>
<thead>
<tr>
<th>Group L LIST</th>
<th>Group K LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>%</td>
</tr>
<tr>
<td>Points</td>
<td>2</td>
</tr>
<tr>
<td>Lines</td>
<td>0</td>
</tr>
<tr>
<td>Areas</td>
<td>0</td>
</tr>
</tbody>
</table>

**Group L MAPS**

| Points       | 4 | 5 | 39 | 9 |
| Lines        | 2 | 4 | 6  | 3 |
| Areas        | 1 | 2 | 1  | 1 |

Note that, in the Group L List, within this inner envelope, only two point places were located (4% of all points mentioned), these 2 points mentioned a total of 5 times, (2% of the total instances of points mentioned). Within this inner envelope, Group L listed very few places. The same might be noted of Group K, although they did list significantly more lines in this Cartwright Garden envelope. Both groups listed few places inside this inner envelope.

When we turn to the sketch maps the situation is quite different. The frequency of mention for Group L remains low, more or less on the order of frequency of mention for the list. But this is not true of Group K. In regard to points and lines, 10% of both of them were found within this
inner envelope, more than twice the number for Group L. Neither group found many areas in the vicinity of Cartwright Gardens—no big surprise since the entire envelope can scarcely be said to amount to a single block.

Our conclusions from Table 14.2 are that neither group was markedly dormocentric on the list, and that Group K was decidedly more dormocentric on the maps than was Group L. Now, let's look at the next envelope.

**TABLE 14.3**

**PERCENTAGES OF POINTS, LINES AND AREAS LISTED AND MAPPED BY GROUPS L AND K FOR SPACE ENVELOPE:**

<table>
<thead>
<tr>
<th>Group L LIST</th>
<th>Group K LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td><strong>%</strong></td>
</tr>
<tr>
<td>Points</td>
<td>10</td>
</tr>
<tr>
<td>Lines</td>
<td>1</td>
</tr>
<tr>
<td>Areas</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group L MAPS</th>
<th>Group K MAPS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item</strong></td>
<td><strong>%</strong></td>
</tr>
<tr>
<td>Points</td>
<td>19</td>
</tr>
<tr>
<td>Lines</td>
<td>10</td>
</tr>
<tr>
<td>Areas</td>
<td>6</td>
</tr>
</tbody>
</table>

Reminiscent of the previous table, both K and L bat in similar ranges when it comes to the list. Even here K is heavier in this envelope of space than is Group L. But not alarmingly. On the other hand, it is alarming when we turn to the map information. Group K located 69% of its points within a third mile of the dorm (more than twice Group L), and these points accounted for a full 75% of the points instanced. Forty-one percent of the lines were located here.

Conclusion: without prior instruction about mapping, Group K produced dormocentric maps; with prior instruction, Group L produced even at this early stage maps of the city of London. That is, instructionless map drawing, at least in this case, produced highly dormocentric maps, maps of the home or dorm area. It would seem proper at this point to consider the conclusions reached about egocentric, dormocentric and coordinated systems of reference by researchers employing an instructionless mapping approach. I have, however, no intention of doing this, for
the simple reason that neither have the authors concerned, in their published work, made sufficiently explicit the exact nature of the mapping situation, nor have they described in adequate detail the nature of the analysis employed in reaching their conclusions. I will note that Hart and Moore consider the domocentric (or fixed) approach genetically prior to a coordinated approach in both the ontogenetic and microgenetic case (Hart and Moore, 1971, 45-59). Yet we have clearly shown that the domocentric products of Group K were produced later than the coordinated products of Group L, and that this difference can be attributed to the nature of the mapping instructions and mapping situation alone and entirely.

In other words, the minimization of the mapping instructions, far from insuring an "objective" product minimally influenced by the apparatus of the investigator, is bound to insure incomparable results that are highly domocentric in character. On this basis, I am tempted, nay forced, to conclude that conclusions reached by scientists employing such techniques in regard to the production of their data, and specifying insufficiently the exact nature of the analysis technique, be, from this point on, disregarded in their entirety. This goes not only for remarks about systems of reference employed by mapping subjects, but for remarks about "route" and "survey" type maps as well. In other words, I reject out of hand any conclusions reached in prior investigations using as a data source sketch maps produced by uninstructed mappers. Furthermore, we must reject the developmental scheme advanced by Hart and Moore, at least in the microgenetic case, to the extent that it is based on such data (e.g. Appleyard, 1969, 1970; Rand, 1969; Lee, 1964; et cetera).

### TABLE 14.4

PERCENTAGES OF POINTS, LINES AND AREAS LISTED AND MAPPED BY GROUPS L AND K FOR SPACE ENVELOPE: BEYOND RADIUS 1/3 MILE

<table>
<thead>
<tr>
<th></th>
<th>Group L LIST</th>
<th>Group K LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Item</td>
<td>%</td>
</tr>
<tr>
<td>Points</td>
<td>36</td>
<td>78</td>
</tr>
<tr>
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<td>92</td>
</tr>
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<td>Group L MAPS</td>
<td>Points</td>
<td>65</td>
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<td></td>
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<td>40</td>
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<td></td>
<td>Areas</td>
<td>36</td>
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To drive my last point home still more completely, note how poorly Group K's maps reflect Group K's lists. Of the points Group K mentions, 65% are in greater London, but only 31% of the points mapped are out there. In other words, Group K's maps poorly reflect the state of its knowledge, the extent of its experience. On the other hand, the Group L maps reflect the Group L lists very nicely. The Environmental A mapping system allows Group L to reflect its experience and knowledge graphically. Lacking instruction in mapping, Group K fails to graphically approximate the nature and extent of its knowledge and experience. What use are its maps in regard either to the study of Group K or London? None. The close correspondence between the two L products gives us some hope that the two schedules are getting at something that may in fact be there.

In Lynch's original study, the verbal responses were much richer than the graphic responses in general and in respect to linear elements in particular. Lynch says that "the correlation between an individual sketch map and the same person's interview was in some cases rather low," that the sketch maps "tend to have a higher threshold," and concludes that the sketch maps "are not a good index of known connective structure" (Lynch, 1960, 144-45). I think that these discrepancies are readily explained by the nature of the mapping task set his respondents.

While my particular philosophy about the practice of science has resulted in the fact that there are no explicit hypotheses to be found anywhere in this report, we did have goals of a more general sort that we wished to satisfy. These goals, set forth in Chapters 2 and 3, include among them the following two:

1) That field mapping by a naive population using a directed and uniform mapping technique has enormous educational potential: specifically, that our group would be better able to cope with the space of tremendously complex urban environments than the control sample.

2) That social science investigations can be mutually beneficial to scientist and subject; that ultimately the subject can participate with the investigator.

To a certain extent, the comparison of the Group L and K London products has shown that we have successfully achieved these goals. As we gathered data, Group L learned and effectively employed a graphic expressive technique. Thus, to a certain extent, the benefit has been mutual. Our fulfillment of the first goal is obvious. Group L, to the extent that they...
felt no fear in mapping the city of London as a whole, is clearly coping more successfully with a complex, urban environment.

IV

Let's concentrate on Group L. Figure 14.10 shows the analysis of the first London maps again. I have duplicated it here for your convenience. Are there any general remarks that we might make about this map that we have not already made? I think we might note that very few of the points displayed were not seen on the all-day sightseeing tour taken on the bus. The few that were not seen included Victoria Station, Soho Square, Holborn Circus and points closely associated with Cartwright Gardens. We must also note that none of the points, as well the lines reported, was mentioned with a frequency exceeding 75%. All of the lines were encountered on the sightseeing trip with the exception of Carnaby Street and Euston Road. These correspond to Soho Square and the Cartwright Garden points. Taking the points and lines together, we conclude that the bulk of them are important, visible, tourist attractions and of such a nature as would be visited on an introductory sightseeing tour. The remaining items fall into two distinct groups: those associated with Soho-Carnaby Street and the "Mod" phenomenon, and those associated with the locality of the dorms. None of these items is highly consensual. All of the mapped areas, with the exception of Regent's Park, fall into the same three classes; those seen on the tour, those associated with Carnaby-Soho, and those around home. Again, none is mentioned with a frequency exceeding 75%. The inclusion of Regent's Park allows us to postulate a fourth class of items; those associated with a trip to Madame Tussaud's. This trip often includes a visit to the London Zoo, Regent's Park and the Planetarium. That the bulk of the items mapped were seen on the sightseeing tour indicates two things: the impact of that tour and the fact that in their individual wanderings the kids have yet to visit similar places with great frequency.

Regarding the issue of imageability, all of the items mapped are highly imageable. The points are all landmarks or highly consistent and strong path intersections: Oxford Circus, Holborn Circus, Piccadilly, Trafalgar and so on. Some have both attributes: Piccadilly is at once an unforgettable landmark and a node. The same holds true for the lines mapped. They are all distinctive, visible paths and in some instances landmarks as well. Such landmark-lines include Tower Bridge, Carnaby Street, the Thames and Regent Street. The areas mapped at this stage are all either strictly delimited in life (the parks fall here) or imbued with strong internal characteristics, such as Soho, the City and the London Docks. (A word might be said here concerning the delimitation of the City on these maps. I have not followed strict London usage in drawing
the boundary of the City around the ancient square mile towards the Tower, but have included in the City all those areas that the kids wanted to include and only those areas. Thus the City is not shown in its full extent to the north and wanders perhaps a little farther west than is kosher.) The kids all felt a distinct gap between Trafalgar and the City, a distinct weakening of visible connectivity. This will show up more clearly in Chapter 17. The south bank varies considerably on the kids' maps and bears little correspondence to the Londoner's south bank. For the kids, it was the visible part of the city south of the Thames. It is mentioned, but with frequencies consistently less than 25%.

In general, the results of the analysis for the first set of maps show us an image of London that could be gained readily in one or two days, and I am probably justified in calling it the American tourist image of the city.

Figure 14.11 shows us the results of the second set of maps. Regarding the points, there has not been a significant increase in their number, but there has been an increase in consensuality. Although no point is mentioned by more than 75% of the kids, more points are mentioned more than 50% of the time. Clearly more kids have made it over to Madame Tussaud's and some have gone to Westminster Abbey to get a chance to see the inside. However, this is not the situation that holds for the lines. There has been an emphatic increase in their number and the image of London has gained in connectivity. The surface of the map is immeasurably richer in this respect. Furthermore, consensuality has increased. Euston Road is mentioned more than 75% of the time. This indicates that the kids are moving around by themselves increasingly and that all this movement is not underground. Turning to areas we see that the surface of London is being discriminated into areal segments, and that there is increased consensuality. Hyde Park moves up over 50% frequency, and the City moves over 25% frequency of mention. Note as well that the extent of London being covered is growing as well. Chelsea appears for the first time. Thus the kids are not confining their mapping activities to increased detail at home, but are moving out into greater London with growing assurance. Note the growth in size of the south bank, the discrimination of the University Area into the University Area and Bloomsbury, the appearance of Victoria, as well as a market region within the City.

Nothing is different about this map and the previous one in regard to the issue of imageability, except that the separation of the University of London from Bloomsbury must have required greater experience than was indicated on the first map. However, with regard to the issue of legibility, it is a different story. The first map of London,
Figure 14.10 Content of the first Group L maps (n=36)
Figure 14.11  Content of the second Group L maps (n=27)
with its lack of connections, provided no legible pattern for the city as a whole. The second map surface shows that increasing experience of the environment is turning London from an experience of floating points into a fabric that is beginning to hang together.

In general, a comparison of the first map with the second shows: increased areal discrimination, significantly increased connectivity and legibility, a slightly richer surface generally, and a definite increase in consensuality.

Figure 14.12 shows us the results of the analysis of the third set of London maps. With regard to the points, they have increased markedly in number, especially when the smaller number of mappers (19 as opposed to 39 and 27) is considered. On the second London map 27 kids generated a total of 79 point items, while only 19 kids on the third map generated 84 point items. (All of these were of course not mapped in Figure 14.12.) Consensuality increases as well, especially locally. The nature of the points continues to be tourist oriented—famous, highly imageable, sights. The story is the same with regard to the lines. There has been an increase of seven lines (Totals remained the same; 43 lines for both maps; instances were up from 188 to 202, again with a smaller number of mappers) and a terrific increase in consensuality: the Thames and Euston are now mentioned more than 75% of the time; Marylebone, Oxford and Carnaby are mentioned over 50% of the time; and fourteen other streets and bridges are mentioned over 25% of the time. Most of the new streets play a critical role. They are not simply new streets, but tie the pre-existing pattern together. Thus High Holborn ties Shaftesbury Avenue into Oxford and carries it into the City via Holborn and Kingsway. Portland Place ties Regent Street and Oxford Street into Marylebone and Euston. Thus Piccadilly Street ties Constitution Hill and Park Lane into Regent Street and the giant node of Piccadilly, while Park Lane ties Oxford Street to Piccadilly and Constitution Hill. This third map is admirably tied together. Recall the sequence: first map, few scattered streets; second map, more streets better connected; third map, lots of streets tightly connected. This sequence takes place under a point system that varies only slightly.

The same is true of the areas. We have increased consensuality, spotlighted by the mention of Hyde Park over 75% of the time and of Regent's Park over 50%; but Green Park, the Serpentine, London Docks, Piccadilly, Soho, the University Area and Bloomsbury are all mentioned with increased frequency. We have lost one area and gained two. The gain has been in an amazing discrimination of the heart of the city. We see not only Soho and Piccadilly, but also a larger commercial area, an entertainment district, and a distinct area around St. Giles Circus.
By this stage of the experience we are in the presence of a rich collective image of the city, now transcending the ordinary tourist image. This shows up in its pure form only in the points displayed. Otherwise we are approaching an image of the city that might be generated by a group of natives. Areal discrimination has become quite fine and the networks of streets is highly connected. Compare this image of London with the images of Boston collected by Lynch from natives of Boston and I think you'll see what I mean. Progress in coming to terms with London has not involved the recognition of new points. These were for the most part seen and remembered from the first day's tour, if not already known from media images. But it is hard to spell out the extent and character of whole areas on TV or in magazines and it is next to impossible to suggest the nature of the underlying network. These are what have been learned in the seven days that Group L spent in London, and these are what have increased in richness from map one to map three.

At this stage we are in the presence of a city loaded with highly imageable point, line and areal phenomena, and in the presence of a city that can deliver them in a legible manner. Needless to say, London does not have the legibility of a city like New York, but seven days seem to be sufficient to garner at least a decent facsimile of such legibility.

Figure 14.13 shows the fourth London map. The number of kids completing a fourth map was only four. Consequently I have displayed only those points, lines and areas that the three of the four mapped in common. The consensuality of this image is impressive. These four kids showed five areas, five lines, and three points in common. Three of the four kids showed an additional seven points in common. The four kids generated a total of 81 items on their maps, a rather amazing figure. A few general remarks can be made about this map. None of the points, lines or areas shown were missing from the first map. That is, the consensual image of four kids drawing their fourth map had already appeared on the first map. That is to say that this map shows the guts of the London image. And what is the guts of the London image? In terms of points, it consists with two exceptions, of very famous places: the Tower of London, Parliament with Big Ben, Buckingham Palace, Piccadilly Circus, Soho Square, Madame Tussaud's, the GPO Tower, and the British Museum. These have in most cases strong international associations, are commonly seen in advertisements, movies, are practically items of folklore. The two exceptions are strong local images: Russell Square and St. Pancras Station, both certainly widely known—nay, universally known—in England itself. A similar, though less strong case, can be made for the lines. As our native guide pointed out, Oxford Street is England's Fifth Avenue, Carnaby Street is internationally renowned, and the Thames needs no introduction at all. Only Euston Road is less
Figure 14.14 A Group K map of Rome
widely known, and is of local importance. Ditto for the areas: Hyde Park, Soho, and the City are items famous beyond the shores of England, while the University Area is of local importance. The guts of the image of London for the kids of Group L consist of a few places of local or particular significance and those things in London that they knew before they came.

Before they knew them as isolated incidents, events of history or the background to movies. Now they could put them together in a whole living, breathing city.

V

The sort of analysis just performed for the content of the Group L maps would not have been possible in the case of the Group K maps. On the one hand, the Group K maps were exclusively of a small area centered on their dorm. On the other, they were composed of symbol systems so disparate as to practically exclude any analysis at all as regarded the city of London. The question as to whether this was true for Group K in London only will not be answered. The analysis is similar to the comparison made between the two groups in London and will be merely sketched in here. First of all I direct you to Figures 14,14 and 14,15. These are two Group K maps pulled at random, both showing Rome. The difference between the symbols systems used on the two maps leaps to the eyes. In Figure 14,14 the emphasis on the area immediately around the dorms is apparent, the dorm being in this case the building labeled Colegio Mexicano. The immediate area is shown in loving detail and is in fact quite accurate both as to content and relative location. The direction to Rome is off by 90° but then that is just the point. The unprepared Group K mapper has not been watching the relations of the macro-landscape and fails to deal with them. Figure 14,15 wanders farther afield, but note the manner in which Rome proper is squashed into the lower third of the map almost as an afterthought, while the area around the dorm is expanded all out of proportion. Furthermore, St. Peter's, the Piper Club and the Trevi Fountain are on the wrong side of the Tiber, assuming west to be at the top of the image as proclaimed by the setting sun and the location of the castle, an item visible from the dorm. Both figures are maps drawn from a variety of points of view. We have aerial perspectives, low obliques, and frontal views. We also have schematic symbols and pictorial symbols. While the two maps are in and of themselves absolutely delightful products, they are rather useless from the point of view of this project. (Frankly, these two maps, from any other point of view, are vastly more engaging than anything produced by Group L. But then Group L was not trying to be cute, humorous, pictorial and so on.)
Figure 14.15  A Group K map of Rome
I shall not display the results of the lists drawn up in response to our question, "Where have you been, what have you seen in Rome." The two groups generated nearly identical lists, more so than was the case in London, since we had no trouble with the tour this time. I will simply state that the actual and perceived experiences of the two groups were identical. With this point in mind, compare Figures 14.16 and 14.17. While the divergences are not as remarkable as they were in London, they are along the same lines. Group K has located the bulk of its points around the dorm. Group L has merely noted the location of the dorm. Group K has located nine points in the rest of Rome, with relatively low frequencies of mention. Group L has located fourteen points in the rest of Rome with a great deal of consensuality. Note that St. Peter's, the Spanish Steps and the Coliseum have been mentioned by more than 75% of the kids. Group L has mapped items farther north and farther south than Group K, including the Olympic Stadium in the north (passed by the buses on entering Rome for the first time) and the Baths of Caracalla to the south (pointed out on the guided tour). Note that all Group K lines are to the west of the Tiber and show great detail around the dorm, that Group L lines include five bridges on the Tiber, the route traveled by all buses entering Rome for the first time, as well as one of the major arteries of downtown Rome. Group K did remarkably well with the areas, though not as well as Group L. The K map shows four areas, all highly visible and with low frequency of mention. Group L shows nine areas, the Vatican over 75% of the time, and some of low visibility (like the rural area near the dorms, and downtown Rome).

There is no need to continue this comparison. The results are clear. Without the Environmental A mapping system, or some surrogate, without a prior disposition to map, Group K has drawn predominately domocentric maps. They did a similar job in London and would probably have done so in Paris had they had the chance. They will no doubt, continue to do so until they are taught (or learn) a mapping system. With this, we dismiss Group K from our discussions.

Before looking at the results of the Rome content analysis, it might be beneficial to glance at a few individual Group L maps. I have pulled four of them at random and they are reproduced as Figures 14.18 through 14.21. The first in the series is the first map of Rome drawn by Tracy Cummings. She has drawn a highly connected map of Rome first time out. This map probably lacks a great deal in terms of its usefulness for the majority of map users. In fact, I would guess that only Tracy Cummings would find this map useful as a guide to Rome. Nonetheless it is important to note that she deals with Rome as a whole, has numbered all her lines, labeled all explicit points, and tried to reduce the unholy chaos of Rome to order. An impossible task. Compare Tracy's tight
Figure 14.16  Content of the Group K maps (n=36)
Figure 14.17  Content of the first Group L maps (n=33)
image with Vanessa Garrison's first map of Rome (Figure 14.19). This map is open, shows the Tiber outside the mapping system, and could probably be used, with a few modifications, by anyone. General orientation is correct and she has tried to draw a network connecting the places seen on the tour with some degree of verisimilitude. Both these maps show an effort to reduce Rome to order, an attempt that exceeds anything tried in London at this stage of acquaintance with the city. I would attribute this superhuman effort to the discussions I had held with each kid about the London maps on the bus trip coming into Rome (on the very day before these maps were drawn).

The second map of Therese Montaigne (Figure 14.20) is characterized by excessive caution. She has given us the cardinal points and within this geographic space has located only those items of the Roman landscape about which she feels confident. And she has made only two minor mistakes: the Coliseum and the "Wedding Cake" are flipped and the tunnel is on the wrong side of the river. Otherwise she has outlined the parameters of the space in Rome with great accuracy and no little insight. Bill Brown's third map of Rome (Figure 14.21) is likewise set within the context of geographic space and within this context operates with great success. He has included a variety of streets that show amazing comprehension of the Roman street pattern, although the Via del Corso-Piazza del Popolo complex is located too far east and south. Bill happened to have spent some time with Omar Lenz riding about Rome on a motor scooter and this fact shows up in this map.

The things that should be noted about these four maps is the generic similarity. The differences—with regard to the symbol system used and the area of the city covered—are minimal, and yet each map is capable of saying something about the person that drew it. Group L maps are sufficiently comparable not to cause the scientist trouble, and yet sufficiently distinct to allow him to talk about the mappers themselves.

VI

We naturally start at the beginning, with the first Rome map, reproduced for your convenience as Figure 14.22. Rather than do the same sort of analysis that I did for London—which you can carry out by yourself—I shall comment on anomalies and make a few comparisons with London. The points are, of course, simply tourist points, all highly imageable, far more imageable than anything in London with the sole exception of the striking GPO Tower. The monuments in Rome are truly monumental, are the heart and soul of the city, and are distinguished by their incredible juxtaposition, modern beside ancient beside baroque. Rome doesn't simply have a large church, it has the largest church in the
Figure 14.18  First Rome map: Tracy Cummings
Figure 14.19  First Rome map: Vanessa Garrison
Figure 14.20  Second Rome map: Therese Montaigne
Figure 14.21  Third Rome map:  Bill Brown
Christian world; it doesn't simply have a memorial to a loved and dead
leader, it has one so gaudy as to be called the "Wedding Cake;" it
doesn't have a nice baroque square, it has one designed by Michelangelo
himself. Everything about Rome is couched in superlative terms. If
someone could ruminate about the history associated with the Tower of
London, they can become eternally lost in the history of the Coliseum.
Rome has only one problem. None of these monuments make sense
together, except for historical sense; they stand out like sore thumbs, and
are connected by the most confusing jumble of streets I have ever seen for
an area so large. And now look at the first Rome map. The points are
clear enough and rather consensual, moreso than was the case in London
on the first map. But the lines are tentative, tightly associated,
penetrating only slightly the maze that is the street pattern of Rome.

The striking thing about the areas are twofold; first the
discrimination of the heart of Rome into six overlapping areas is a fact
that I don't think would have happened without a strong set in the minds of
the kids toward mapping areas. And then there is that rural area hanging
onto the dorm. Rome is so small that fields amounting to countryside can
be seen from the dorm itself. This caused extensive comment among the
kids and will continue to show up with increasing frequency.

Comparing Rome with London: London is larger but more
clearly organized than Rome, at this stage of the mapping process.

Figure 14.23 bears out this point and another more general.
In London we saw that the points that appeared on the first map were the
points that continued to show up on subsequent maps without significant
change, except regarding consensuality. This is borne out in Rome. Few
points have been added and in this case they are only slightly more
consensual. The Piazza Venezia has moved up over 75% frequency of
mention, but little else has happened. As was the case in London, it is
the lines that have flowered on this map. Seven major arteries have been
added on this map, as well as increased detail locally and heightened
consensuality generally. The Tiber is now mentioned by at least 75% of
the kids, and the Via del Corso and Via Caseletto by more than 25% of
them. What has been drawn on this map is a first: a connected route
from the dorm to the drop off spot in Rome. In Rome each morning and
afternoon buses left the dorms for Rome, for the Piazza Venezia. One of
the frequently used routes can be traced on this map. It starts on the
Via Caseletto, proceeds up the Via Olimpica, turns right onto the Via
Aurelia, crosses the Tiber and coasts down the Via Emanuele Vittorio.
From this snake of a route we find feeders leading to St. Peters, to the
Coliseum and to the Piazza del Popolo. Given the nature of the street
network of Rome it is no mean feat.
Figure 14.22  Content of the first Group L maps (n=33)
Figure 14.23  Content of the second Group L maps (n=30)
Figure 14.24  Content of the third Group L maps (n=24)
VII

There are no Group K maps of Paris for reasons explained earlier, and the number of Group L maps was less than half those collected in Rome and London. A glance at Figures 14.25 and 14.26 will establish immediately the generic similarity of the Paris product to those acquired in London and Rome. In Figure 14.25 we have Rhoda Noyes' first Paris map. It consists as do all Group L maps of points and lines with the typical violation of the rules to draw the river. Rhoda has also given us a picture of the Arch of Triumph. A couple of things are apparent; this city differs from both London and Rome by being focused on its river. Clearly the points of interest on Rhoda's map are either in, on, or along the river, for the river acts as a strong organizing influence. This was definitely not the case in London where the river acted as the southern boundary of the known world, nor in Rome where its role was more central but still peripheral. The only other line Rhoda has drawn is the Champs-Elysees, a strong, obvious boulevard. Similar remarks might be made about Vittoria Palazzo's second map of Paris (Figure 14.26). The river is clearly the central object of greatest concern and as usual has been the occasion of a violation of the point-line-area method. She has, however, included two additional streets: Avenue New York, possibly because of the name (Vittoria comes from New York) and the Boulevard Jourdan, on which is located the dorm, in this case one of the colleges of the Cité Universitaire. The critical thing about the maps once again is their clarity and comparability. However, these two examples are somewhat typical in the sparseness of the detail. Paris was a time of travail in the collection of the maps. Drawing the maps was sometimes a pain and sometimes a joy, but it was always with emotion.

The first Paris map is shown as Figure 14.27. The points on this map are not as prominent as they were on the first map in either London or Rome, and in fact this is a clue to one of the differences between the cities. Paris, despite the Eiffel Tower and the Opera (mapped here by more than 75% of the kids), is not a city of monuments. E. A. Gutkind has grappled with this problem, the problem being that there somehow seems to be nothing in Paris to talk about. His conclusion is: "What is invaluable is the atmosphere, the spirit of Paris—in brief, the imponderables, which belong just as much to the essential nature of a city as its external appearance and physical form" (Gutkind, 1970, 238). And yet, as much as I agree with him, this spirit must have an abiding place. Certainly, it is not in the monuments that we will look for this, but rather in the streets and parks of this great city. So I see in the particular points located on this first map merely those things that were seen on the sightseeing tour. Period. Paris, however, is to be found in the lines. Several things are amazing about the lines displayed on this first map of Paris. In the first
Figure 14.25  First Paris map: Rhoda Noyes
Figure 14.26  Second Paris map: Vittoria Palazzo
Figure 14.28  Content of the second Group L maps (n=10)
there is the large number. No other first map shows such an abundance of linear elements, and no other first map shows these elements with such marked consensuality. This is a first map and yet the Seine is already mentioned by more than 75% of the kids; this is a first map and yet the Champs-Elyesses is mentioned by more than 50% of the kids; this is a first map and yet three other lines are mentioned by more than 25% of the kids. It is remarkable. And not only are there lines but these lines comprise the beginnings of a tightly connected network. The Champs-Elyesses ties into the Rue de Rivoli and the Boulevard St. Germaine at the Place de la Concorde, and both these streets branch off into the Boulevards St. Michel and Sebastopol. Nor have we ever seen so many areas on a first map, and I have failed to map the two most frequently mentioned areas: the Right and Left Banks. And yet, given what we have there is a remarkable consensuality about the areas, including the mention of the Ile de la Cite and the Cite Universitaire by more than 75% of the kids, and the Luxembourg Gardens by more than 50%.

Generally, it is a remarkable first map, deviating from our other first maps both in respect to the large numbers of lines and areas and in regard to their degree of consensuality. Rather than attribute this difference to the kids, I would attribute it to the variant nature of the environment being mapped. The nature and number of points is more or less what we have come to expect as normal.

The second Paris map was produced from an analysis of only ten sketch maps. There is nothing methodologically wrong with this, but the small number of kids has a dampening effect on one's tendencies to generalize. But then, from the relationship between the fourth and first London maps, with numbers of kids running from 4 to 36, we might expect in the case of small Paris samples to be dealing with the heart, rather than the complete expression of the image. At any rate, this is the position that will be taken. In regard to the points shown on this second map it is seen that there is little change, except for increasing consensuality, and although this has come to be expected on second maps, some of the increase is likely due to the small sample. All of the places mentioned by at least eight of the kids are world renowned: the Eiffel Tower, Notre Dame, the Louvre and the Opera. Of the balance mapped, some also fall into this category of fame, while others would not be familiar to those not acquainted with Paris itself: the Jeu des Paummes, the Chatelet, the Portes St. Denis and Orleans, and the Metro stop at the Luxembourg, for instance.

But the continued florescence of the lines is not a function of sample size for we saw nothing like this on the fourth London map. This is once again simply remarkable: twenty-five lines have been mapped,
and if twelve of these come to us as a unit, they are nonetheless real for
that. The knowledge shown by the kids of the bridges is astonishing.
In all three cities they were able to distinguish a number of bridges, but
seven exceeds anything we have seen, and none of these bridges are as
imageable as the Pont San Angelo or the Tower Bridge. But then, bridges
were crossed in London and Rome with nothing like the frequency with
which they were crossed in Paris. This emphasizes once again the central
role of the Seine in the image, and in Paris, which shows up in the fact
that it appeared on all ten maps for total consensus, a very rare event
for any size population. Going from map one to map two we have lost
only one street; the Boulevard Sebastopol, a street that emphatically
does not lead to the heart of Paris. There is another factor which might
lead to the legible character of the Parisian street system and that is the
plethora of maps that litter Paris like waste paper litters New York.
There are quite simply everywhere. London was also exemplary in this
regard, but doesn't hold a candle to Paris, for in addition to maps at
every Metro stop—including the variety that light up your route and
invite play—every bus-stop has a map of the route and every bus
contains several maps of the route WITH THE MAP OF PARIS SCREENED
BENEATH IT. This is astounding. Paris, not that illegible to begin
with, has gone out of its way to clear up the slightest obscurity. This
may well be one of those imponderables that makes staying in Paris such
a pleasure. There is never a hesitation about taking a bus, no faint­
hearted contemplation of route numbers, but instead a map. Paris is
path conscious and the kids' maps reflect this.

This path consciousness is carried over into the areas for
there, as big as sin, is an area characterized by its paths! Les Grands
Boulevards are a problem for the pedants. Created by Haussmann in the
19th Century they are alternately condemned and admired. Edmund Bacon
called them the "life-giving boulevards of Haussmann" (Bacon, 1967, 179)
while Gutkind says of them and their creator: "Haussmann was not the
initiator of a new era but an opportunist who, in a fireworks of ostentatious
and hollow grandeur, glorified the ambitious aspirations of a parvenue
society" (Gutkind, 1970, 198). And of course Haussmann is right, but only
as far as Haussmann is concerned. What matters, as Gutkind realizes
ultimately, is what goes on on those boulevards and what they mean in
terms of life. Let a Frenchman tell us: The singer is Yves Montand.
The writers, Jacques Plante and Norbert Glanzberg. The occasion, Yves' 
One Man Show at the Theatre de l'Etoile in Paris, 1958. I wish you could
hear it:

I love to hang around the big boulevards. There's so
much to see. I love the booths and the bazaars, the
displays and the lotteries. I'm not a millionaire. I can't pay for diversions every day of the week. So when work ends, I slip between Saint Denis and the Boulevard des Italiens. That's where the great heart of Paris beats, where moments of history are written everywhere... And coming to my room like an appeal, is all the clamor and the lights of the bewitching world of the big boulevards. (Translated by J. Spencer)

The title of the song, like the name of our area, is Les Grands Boulevards, and the song explains the attraction of these streets like no scientist ever could. All the "grand boulevards" are not located within our region, nor would the region shown probably be called "Les Grands Boulevards" by a Parisian, but its inclusion is certainly indicative of the fact that the streets of Paris are pervasive in its image in a way that the streets of Rome and London never were.

The rest of the areas need little comment except to note the increasing consensuality. Montmartre, both Seine islands, the Luxembourg, and the Cite are all mentioned by at least eight of the kids.

Generally, it is the second map that we would expect given the first one, showing all the traditional changes from first to second maps with a special emphasis on the paths.

The third and fourth Paris maps have such small populations as to make remarks about them entirely speculative. The number of kids who drew the third map was eight and the number who drew the fourth map was three. I remember sitting with Des Jencks in a small cafe near the Gare Luxembourg and hearing him justify the fact that he wasn't going to draw me any maps. His reason was simple; I would never get thirty maps of a given type and hence would not be able to make significant statistical measures of their content. If only that myth had never been born, maybe I would have at least one more mapper for each session. But there's no use crying over spilled milk.

On the third map I have displayed only those results agreed upon by at least two kids. The image is practically identical to that of the second map. Only one new point appears and this is the American Hospital. We have lost several points. There is a certain perverseness about the way the lines hang on, nay, grow, for we have added the Quay d'Orsay and lost nothing. The same is true of the areas: we have added the Champs des Mars. In effect, eight kids have produced a richer surface purely as the result of continued experience than ten kids, or
sixteen kids, did with less experience. I don't know that there is much more to say about Figure 14.29.

Figure 14.30 is another story, a saga in perseverance. The points have faded to the minimum, and yet these are not all famous places. The Cluny Museum is a small thing crammed with Medieval art, the American Hospital has no claim to fame, the Gare Luxembourg is not remarkable in any way, and the Porte d'Orleans is just a large intersection. This map is not comparable to the fourth London map. This is not the guts of the Parisian image as that was for London. These points were mapped by kids continuously exploring and extending their experiential and geographic horizons. But they have not been able to hold the level achieved by eight regarding lines. There has been a disastrous fall-off from the third map, even taking into account the fact that I have only shown those places mapped by two of the three kids. This is the guts of the tourist street network: the Seine, the Pont Neuf, the Boulevard St. Michel and the Rue de Rivoli. But there has been no such decline in the number of areas mapped and astoundingly we even find new ones: the Sorbonne has become an area in its own right and the Bois des Vincennes has added to round off the city to the west. Taken as a whole, this final map of the trip is a tribute to the kids that drew it, and their desire to see something finished. At the same time it is a tribute to a city that could not be plumbed in the days available, that kept growing, ending in an image that continued to grow through turmoil and decimated numbers. The whole collection of Paris maps is such a tribute. Whatever they say about the genesis of map making and the acquisition of geographic knowledge, they say infinitely more about compassion and understanding.

VIII

It would perhaps be reasonable to aggregate all the Paris maps into one map, all the Rome maps into one map, all the London maps into one map, in an attempt to assess the aggregate image of the city. Perhaps. But for our purposes here it would make no sense whatsoever, for our primary concern is not with the image of the city, but the way that image changes through time with growing experience. The series of eleven maps showing the results of the content analysis speak to this point. They do not say, nor are they capable of saying, anything about the relations of the things displayed on our maps. They speak merely to the presence or absence of certain things and the increase or decrease in these things. This is not all there is to the growth of an environmental image but it is a vital component. On the relevant points the series of eleven maps speaks definitively and unequivocally and somewhat surprisingly.
1) The changes that take place from map to map do not take place in the same way for points, lines and areas. These map elements vary in number at different rates and the fact that they do so gives substance to our intuitive claim that the three phenomena are real. At least for the pedestrian tourist or the tourist ferried by bus drivers, the distinction between landmarks and nodes made by Lynch seems to be worthless, as does the distinction between edges and paths. When these distinctions are eliminated it will be seen that Lynch is also dealing with points, lines and areas. The variant behavior of these three elements justifies our treating them separately.

2) The role played by point phenomena seems to be most crucial in the early stages of landscape acquaintance. The points that appear on our maps appear in great part on the first map and do not significantly increase or decrease in number thereafter. This was true for London, Paris and Rome. But this is also capable of inference from the distinction between points and other elements geometrically. Points are the simplest of the three elements, and hence most readily cognizable, imageable. A point can be taken in at a glance, whether a piazza or tower. Points can be contemplated as objects wholly at once. A tour takes you from one point to another, on the scale of cities from monument to monument, on the scale of continents, from one city to another. The points have a clarity that the intervening matrix lacks. The points are used as anchors for the other elements. Thus point knowledge appears to be genetically prior, reasoning from the geometric character and reasoning from the evidence presented on our eleven maps.

3) The second map in each city was characterized by an increase in the number of lines. This was least marked in Paris where lines appeared in abundance on the first map. In the case of Rome and Paris the second map marked the springtide of lines, while in London they continued to proliferate on the third map. Lines are intermediate in complexity between points and areas, being composed of points and making up areas. The appearance of lines on the first map of
London and Rome was equivalent to the appearance of points. The lines were not included in their role as paths but in their role as sights. Thus in London it was not the path character of Oxford and Carnaby Streets that insured their appearance, but their character. It is on the second maps that streets begin to appear in their role as paths, emphasizing connectivity, building a network that goes from point to point. Lines are genetically subsequent to points and precursive to areas. The evidence of our eleven maps speaks to this, though the Paris evidence is somewhat confusing.

4) Areas which appear on first maps, do so as points. Hyde Park for instance is not known as an area when it first appears in London, but as a place, a point, a thing with unknown extent but imageable aspect. Areas begin to appear as areas on the second map, but in all three cities it is the third map that shows the greatest number of areas, with the equivocal exception of Paris. This is clearest in London, but is also true in Rome. It particularly applies to areas that are not bounded such as parks. Thus the appearance of neighborhoods like Chelsea comes after the appearance of areas like Green Park. Chelsea has no boundary and its existence is attested to by no walls. Its existence must be discovered and its extent remains forever elusive and subject to debate. This is the only element for which this is true. Points have clearly marked substance. Lines are invariably labeled. Unbounded areas are the only exception, and are consequently most difficult to cognize and the genetically final stage of the acquisition of geographic knowledge. This is not to say that new lines and points are not recognized when one has reached the stage of areal definition, but that first points were recognized and located vis-a-vis one another, and then these points were connected by lines and finally areas in which the points and lines are embedded are discovered.

5) This genetic sequence is not independent of the nature of the environment. Overly assertive points may prolong their importance into other higher stages (Rome), while the lack of linear
clarity may retard development of a network until many areas have been established (Rome). Strong paths may accelerate the development of a network before or concomitantly with the establishment of a pointillistic net (Paris). This is not to say that the genetic sequence described above is not followed in Paris and Rome. It is, but rates of appearance are affected strongly by the environment.

6) Understanding this genetic sequence and the roles played by point, line and area phenomena allows us to outline the components of a legible city in a systematic way not hitherto attempted. A legible city (or other landscape) must contain a sufficiency of point phenomena to allow the construction of an image. These points must be highly imageable. These points must bear a useful relationship to the linear component which will be the second stage of acquaintance. Thus the London Zoo, not tied into the street pattern is of no value in this process and no one in Group L was able to link the London Zoo into the network of London streets. Finally the points and lines must bear some relationship to the areas delimited or the ability to discriminate areas will lie dormant. Using these criteria in the absence of data allows us to assess the legibility of any city. New York has strong points that can be cognized and remembered before the city is reached no matter how you approach it. These points are tightly tied to the street pattern and both work subsequently together to define areas. It is possible to come to grips with New York in a single day. How many people know at least two boundaries of Harlem without ever having been in New York? This is a feat and it's possible because the essential points, lines and areas of New York can all be communicated with reference to each other, building on the markedly imageable character of such points as the Empire State Building, the World Trade Center, the skyscrapers of Midtown Manhattan and so on.

A legible city is built on imageable points. These points add up into legible networks. These networks define legible areas. The whole is an imageable
city. Taking London as an example, it would be possible to quantify this sequence and establish the dimensions of "sufficient" vis-à-vis an area of given extent, though an even more detailed study using a larger and more varied sample would make the results more generally useful. But tour groups of all kinds—adult, kid, Black, White, Chinese, American, male, female, rich, very rich, poor, student—go to Europe every summer. The task is susceptible of accomplishment and cries aloud to be done.

These six conclusions can be even more briefly summarized:

1) Points, lines and areas are the best divisions of the urban environment.

2) Recognition and organization of points precedes the recognition and organizations of other elements.

3) Recognition and organization of lines follows that of points.

4) Recognition and organization of areas follow that of lines.

5) This genetic sequence is not independent of the environment.

6) Understanding of this genetic sequence can lead to the construction of a quantifiable model of imageability susceptible of application in the absolute absence of a sample population.

That's enough for any one chapter to conclude.
I am no artist. A neat and intelligible drawing is the utmost that I can produce. But even this modest degree of achievement may be very useful, as I have discovered many a time in the laboratories—indeed, I have often been surprised that the instructors of our youth attach such small value to the power of graphic expression; and it came in usefully now, though in a way that was unforeseen and not fully appreciated at the moment.

... R. AUSTIN FREEMAN
A Silent Witness
Whereas content analysis allowed us to investigate the group reaction to the environments of London, Rome and Paris with particular regard to the imageability and legibility of these environments, the analysis attempted in this chapter will allow us to examine the individual kids' ability to weave a connected network out of these environments. While the content analysis could have been just as successfully employed to investigate mere lists of places, the present analysis will probe the degree of connectivity between these listed places in the spatial dimension.

The map instruction schedules in Chapter 3 indicate that the method we tried to teach the kids should have resulted in maps that were completely connected. That is, each of the landmarks located should be connected to another by a line. One of our hopes (it was too hopeful to be considered an actual hypothesis) was that, through time, the number of lines connecting each landmark with another would increase. In other words, if in drawing the first map, only one route between two points were drawn, on the second map an alternative route would appear, on the third, a third route, and so on. Increased environmental literacy would result in a map with enhanced connectivity. The question was: does an analysis technique exist that would allow us to test our contention in a reasonable fashion?

Yes, such a technique exists and is well developed. Graph analysis answers our needs perfectly. Graph analysis, an applied case of graph theory, is a rather recent offshoot of a rather recent concern of mathematics. Most graph theoreticians trace the origin of their interest to a paper published in 1736 by Leonhard Euler (see Ore, 1962, ix). The paper, called "The Seven Bridges of Konigsberg," deals with the famous puzzle most of us have seen at one time or another, wherein we are to trace a path such that we shall cross each of seven bridges once, but only once. In solving this particular puzzle, Euler also solved the general case and in so doing created the first floor of a by now amazing mathematical structure. He opened his paper as follows:

The branch of geometry that deals with magnitudes has been zealously studied throughout the past, but there is another branch that has been almost unknown up to now; Leibnitz spoke of it first, calling it the "geometry of position" (geometria situs). This branch of geometry deals with relations dependent on position alone, and investigates the properties of position; it does not take magnitudes into consideration, nor does it involve calculations.
Euler's interest in the geometry of position lay dormant for nearly a hundred years, when, in the middle of the Nineteenth Century, the thread was once again picked up. When it was picked up, it branched into two threadlets, deeply interconnected, yet distinct: topology and graph theory. Both took off from Euler's general solution to the problem of the seven bridges of Konigsberg, which also turned out to be a powerful tool for the investigation of polyhedra. A polyhedron is a solid whose surface consists of a number of polygonal faces, and Euler's formula reads:

\[ V - E + F = 2 \]

where \( V \) denotes the number of vertices, \( E \) the number of edges and \( F \) the number of faces. In proving Euler's formula, Courant and Robbins write:

"...Let us imagine the given simple polyhedron to be hollow, with a surface made of thin rubber. Then if we cut out one of the faces of the hollow polyhedron, we can deform the remaining surface until it stretches out flat on a plane. Of course, the areas of the faces and the angles between the edges of the polyhedron will have changed in this process. But the network of vertices and edges in the plane will contain the same number of vertices and edges as did the original polyhedron, while the number of polygons will be one less... since one face was removed. We shall now show that for the plane network, \( V - E + F = 1 \), so that if the removed face is counted, the result is \( V - E + F = 2 \) for the original polyhedron." (Courant and Robbins, in Newman, 1956, 581)

To me, nothing could be more obvious than that at this point in their proof, Courant and Robbins are actually dealing with a sketch map produced by the kids in Group L using the point-line-area method. The vertices are our points, the edges are our lines, and the faces are the areas enclosed by the lines. Fortunately, it is not necessary to follow the development of topology and graph theory from this simple beginning to the elaborate mechanisms that exist now. Although their application to mental maps is novel in geography, the use of these techniques is well established, particularly in the investigation of transportation networks. Summaries of the use of graph theory appear in Kansky (1963), Haggett (1965), Chorley and Haggett (1967), Cole and King
Unfortunately, of all these summaries only Kansky's is adequate for the beginner, because the other discussions demand prior familiarity with the foundations of graph theory before they can be used. While they all discuss the Alpha, Beta and Gamma indices, and mention the concept of "graph diameter", while a few even define the cyclomatic number, and while they all show the usefulness of these measures in application to airline and railroad and river networks, none of them, with the exception of Kansky, make explicit the nature of the minimal graph, clearly distinguish between a graph and a subgraph, or provide adequate criteria for the distinction between planar and non-planar graphs on theoretical grounds. Furthermore, among the summaries noted there is a massive inconsistency in terminological usage which makes cross reference between them difficult (and for a complete picture, cross reference is a must). Finally, the ultimate blow, none of the terminology used by the geographers bears the faintest resemblance to that used by Oystein Ore, whose Theory of Graphs (1962), remains the best mathematical summary of the field in English.

Nonetheless, depending solely on Ore, I was finally able to commence analysis of the Group L maps. The first map I tackled has been previously reproduced as Figure 14.0. As reference to this figure will show, it consisted of single points floating in space, single unterminated lines floating in space, points embedded in floating lines, as well as a series of points and lines connected together. Since I wished to consider the entire map as a graph, it was necessary to deal with all the elements displayed. According to the rules of graph analysis I was forced to consider each free-floating element as a subgraph. Further, I was constrained to consider each line, whether free-floating or not, as an edge or line; to consider each point, free-floating, denoted or intersection, or unmarked intersection, as a vertex; and to count as areas only those spaces bounded by lines. It was sufficient to calculate the cyclomatic number for only seven maps to understand that something was leading me astray.

The results obtained from the analysis of these first seven maps were wildly contradictory. I was obtaining impossible results for planar networks. I continued to vary the criteria until I discovered the root of the problem. In graph theory a link or an edge is a special line. It may be seen as the edge of a solid figure, or a link between two points, but never simply a line, as sketched by Lana Monroe or as understood in Euclidean geometry. In graph theory, all lines are terminated finitely by points. In fact, graph theory is not really concerned with lines at all, but quintessentially with points. Ore writes:
The first problems in graph theory dealt with configurations of points with lines joining them. In these configurations it was immaterial whether the lines were straight or curved continuous arcs between the endpoints; whether they were long or short. The fact that they connect two given points is the only essential element. (Ore, 1962, 1)

He is even more explicit for his definition of a graph reads: "There shall be a set V consisting of the points which shall be considered to be connected in some fashion" (Ore, 1962, 1). The only other allowable graph definition is that of a null graph which is to consist of a set of points V connected in no fashion whatsoever. But nowhere in graph theory or graph analysis is there room for finite lines connecting nothing, or unterminated by the points which are the proper subject of the theory.

So the solution of my problem was simple. All I had to do to be able to apply graph analysis to my maps was to assign a point to the end of every unterminated line. I could easily consider the floating points to be null subgraphs. I did so, reanalyzed the seven maps and obtained consistent results. It was smooth sailing, except that I gagged every time I assigned an endpoint to an unterminated line. The act seemed to me to be thoroughly illegitimate. Why? Consider the act of mapping and the significance of the points. The points on our maps are not abstractions, but in fact symbols for actual landmarks, buildings or places with unique characteristics. Likewise our lines are not abstract connections between these points, but symbolic of actual streets, rivers, bridges and so on. The question is: is there an implied and intended distinction between a line ending in a point, and one not ending in a point from the point of view of the kid drawing the map? The obvious answer is "Yes." The drawing of an unterminated line means that the mapper is aware of the existence at that spot of a linear phenomenon, but that he is unaware of the nature of the endpoints of that phenomenon. Thus one may cross Oxford Street and be aware that Oxford Street continues in a linear fashion in two directions from the point of intersection, without being aware of anything else about that street. So, whenever I assigned an endpoint to a floating, or otherwise unterminated, line I was imputing knowledge to the mapper that was not, in fact, there. Furthermore, it could get out of hand. Thus on Monroe's first map (Figure 14.0) I was forced to assign eleven points before I could continue with the graph analysis. On other maps the number of added points was much higher. If, however, I abandoned this process of adding points, I would at the same time abandon the possibility of using graph analysis, a technique of great promise. I could, of course, continue to use graph analysis to analyze those portions of the sketch maps consisting...
of legitimate subgraphs, but this would be an analysis, not of the maps as a whole, but of parts of the map arbitrarily segregated by the demands of a mathematical theory. The question was simple: was I to interpret my data in the light of an analytical technique, or was I to find a technique that could handle data as it came from the pencils of Group L?

The answer was also simple. I abandoned graph analysis as a useful tool for dealing with the maps as wholes.

II

Nonetheless, there was a valuable distinction that needed to be made in regard to the varying degrees of connectivity that obtained among the various maps of any individual, among the various individuals, and among the maps of the three different cities. Was there any way to achieve the ability to make these distinctions without engaging in further illegitimate activities? It occurred to me that the issue of connectivity was closely related in the case of mapping to knowledge, and I considered ranking the various graph-like elements that were causing me problems in order of the amount of knowledge needed to draw the various elements (meaning the free floating points, the free floating lines, and so on, each being considered a specific type of graph-like element). The basic assumption involved here is that a more highly connected map somehow involves a greater awareness of the relations of the map content than otherwise. This assumption is open to question, but my reasoning was as follows.

The simplest thing one could place on the map surface was a single isolated unconnected point. This point generally represented a single landmark, and awareness of any number of isolated landmarks could result from a comparatively passive sightseeing experience. Thus, the kids were ferried around in the bus, taken to a number of landmarks, and allowed to see and explore them. In most cases these landmarks were already part of the kids' cognitive systems. Then the kids got back on the bus and were magically conveyed to another landmark. Most experience can be disintegrated into a number of points.

Now, what is involved in placing these points on a map? They could be scattered helter-skelter on the map, or meticulously located vis-a-vis one another. But as long as the points were not connected by lines of any sort, only two sets of discriminations were really necessary on the piece of paper: the point had to be located in the horizontal dimension, and then in the vertical dimension. Period. This seemed to me to demand the minimal input from the mapper, demand the least knowledge, and involve the lowest level of connectivity.
Then consider the question of the free floating line. The experience necessary for a line is greater than that for a point, if only in the sense that linear experience is composed of pointilistic experience. Further, the experience, and the subsequent drawing of the line, involves more than location in the vertical and horizontal; it involves sequential decisions which result in the line having bearing and extent, attributes which do not pertain to a single point. It seemed that the free floating line demanded greater input from the mapper, demanded more knowledge, and suggested a higher level of connectivity—if only implicitly.

A free floating line terminated by a point constitutes the next step in the series. It demands more knowledge (ability to associate the landmark with the street), and hence greater input from the mapper, but it is also definite evidence for the first time of connectivity per se. If all that is demanded in the case of a point is recognition of a landmark, and all that is demanded in the case of a line is an aggregation of pointilistic phenomena, then a line terminated by a point means that out of the series of points composing the line one has been singled out as being crucial for an understanding of the linear phenomenon in question. Or, conversely, that the line is in some sense critically involved in the understanding of the point. In any event, two different realms of geographic knowledge are being linked.

Following the same line of thought it occurred to me that if the point were embedded within the line, rather than terminally attached, we were then in the presence of yet a higher order of discrimination. The line terminated by a point could be seen representing this situation; the kid recognized a landmark and further recognized that the street ran away from (or toward) the landmark in a given direction. In the case of the point embedded within the line the kid recognized that the street ran away from (toward) the landmark in two directions. In terms of connectivity, the line terminated by a point suggests the connection of that point with one other point, presumably to be found at the other end of the line, while the line embedded with a point suggests connections with that point at both ends of the line, and hence greater connectivity.

In the four cases mentioned so far, however, while there is some hint of connectivity in the graph theory sense, there is in fact no real connection of two separate points. A map could consist of these four icons without showing any connections among them. But basically we could rank maps that consisted solely of such icons already. Thus a map consisting solely of unconnected points could be taken as implying less connectivity than one consisting entirely of lines, which in turn could be taken as implying less connectivity than one consisting completely of lines terminated by points, which could be taken as implying less
connectivity than one consisting totally of lines with embedded points. These free floating icons comprised an enormous portion of the things drawn on our maps, and none of them fell within the province of graph theory.

The obvious next step was to consider a line terminated at both ends by points. Such an icon was connected, both in the graph theoretic sense and in the sense that the kid had recognized two landmarks and recognized and drawn a real relation between them. In this instance, connectivity was not implied, but demonstrated. That seemed to be the end point of my hierarchy. I was troubled, however, by the following seemingly more involved icon, namely a line with two embedded points: • • . The problem was that this assemblage implied greater connectivity than a line terminated by two points, and yet the line utterly terminated by two points seemed to be finally connected, to comprise a definite unit, to constitute a well-rounded remark about the connectivity of two points, while the line with two embedded points, while being as connected as the other in regard to the two points, seemed to trail off indefinitely, implying, at least to me, that the mapper had less complete knowledge of the environment in question. The issue is more meaningful in the form in which it generally arises on the sketch maps themselves. Which of the following is the more connected: this [ ] or this [ ]. Rephrased in this manner, there can be no question that the first evinces the greatest connectivity. It constitutes a total, closed set of remarks about six landmarks and six streets. The latter constitutes, on the other hand, an open, partial set of remarks about four landmarks and six streets. The former is more connected, the latter less so. As can be seen, the line terminated by two points is merely a special case of the first drawing, while the line with two embedded points is a special case of the second drawing. Arguing from the more general case, I finally decided to consider • • as more connected and hierarchically higher than • • . This latter icon in all of its manifestations has been called a trailing subgraph, whereas the former has been termed an actual subgraph, since it is the only one of the six icons so far isolated that would be considered a subgraph in graph theory.

This brings us to the end of my mental peregrinations. I have isolated six combinations of points and lines, ranging from minimal connectivity (in the case of free floating points) to maximum connectivity (in the case of the actual subgraph), without delving into the degree of connectivity as it might vary from actual subgraph to actual subgraph. (Note that graph theory would have allowed me to rank subgraphs. For example it would allow me to assess this [ ] as more highly connected than this [ ] since there are more connections per point in the former than in the latter. I decided not to pursue this route,
Figure 15.0 Leslie Casyk's third London maps showing the following pseudograph elements: point, line, line with terminal point and line with embedded point.
Figure 15.1  Tracy Cummings' first London map showing the following pseudograph elements: point, trailing subgraph, actual subgraph.
inasmuch as the actual subgraphs amounted to a small portion of the icons found on the maps. Such a ranking would add little to an overall understanding of the maps as a group.) These six icons shall be hitherto termed the pseudograph elements.

Two issues remained. The first of these was to discover whether or not the six pseudograph elements isolated covered all of the possible configurations found on the kids' maps. Figures 15.0 and 15.1 show two maps with several of the elements isolated. All the maps were examined in this fashion and none of them was found to contain any but the six pseudograph elements considered above.

The second issue was to invent a mechanism for dealing with these pseudograph elements in a quantitative manner that would allow us to assign a single number to a given map. To that end, three simple devices were settled on. The first measure was a simple enumeration of the number of pseudograph elements on a given map. The second was to work out an index of fragmentation. The third was to provide an index of average element complexity. These three indices are considered individually below.

1) Number of Elements. This entailed nothing more than counting the number of A) points, B) lines, C) lines with terminal points, D) lines with embedded points, E) trailing subgraphs, and F) actual subgraphs. Thus if a map consisted of six points (P), it had a number of elements (NE) of 6. If, on the other hand, it consisted of one each of the pseudograph elements, it still had an NE of 6. Thus, the NE simply notes the number of pseudograph elements on a map and makes no remarks about their connectivity. However, as will be seen, it is nonetheless a powerful guide to the map. The maps of David Abrams, for example, seldom had an NE much greater than 1 or 2, but these were both actual or trailing subgraphs. On the other hand Erica Cruz usually came up with very high NE's, for her maps contained nothing other than free floating points or lines. Thus while the measure seems deceptively simple, due to the nature of the pseudograph elements being counted, it actually contains a great deal of information. This will become clearer as we examine the results of the analysis.

2) Fragmentation Index. This entailed a great deal more than simply counting, and yet is quite simple. Each of the map pseudograph elements was weighted, entirely arbitrarily. Since a map consisting entirely of free floating points was obviously more fragmented than a map consisting of a single actual subgraph (AS), and since we wanted to assess degree of fragmentation, it was decided to weight the pseudograph elements more heavily as they were simpler in nature. Thus each P received,
arbitrarily, a weighting of 6, each line (L) a weight of 5, each line with terminal point (LTP) a weight of 4, each line with embedded point (LEP) a weight of 3, each trailing subgraph (TS) a weight of 2 and each AS a weight of 1. It was then a simple matter to calculate the fragmentation index (f):

\[ F = 6(P) + 5(L) + 4(LTP) + 3(LEP) + 2(TS) + 1(AS) \]

As index of integration could then simply be calculated by taking the reciprocal of \( F \) \((100/f)\). The objection that these weightings are quite arbitrary is readily admitted and yet is not considered a serious drawback to the general scheme. It is now entirely possible to assess each of our maps and assign to it a number that readily classifies it, if not uniquely, at least sufficiently from other maps for our purposes. Note, for example, that a map that consists entirely of a single AS would have an \( F \) of 1, while a map that consisted of 100 P's would have an \( F \) of 600. All the maps can be assigned similar numbers and ranked along a continuum running from total integration to open-ended fragmentation.

I doubt that it has escaped notice that the fragmentation index continues to rise with each additional pseudograph element. Thus a map consisting of fifty P would have an \( f \) of 300, while one consisting of five P would have an \( f \) of 30. Now, these two maps are equally unconnected, and yet they show different \( F \)'s. Thus the \( F \) rates two equally fragmented maps differently, or, in other words, penalizes a mapper for each additional pseudograph element added. While I still feel the \( F \) to be a significant measure, this objection has weight, and it was in an attempt to come to grips with this that a third measure was invented.

3) Average Element Complexity. The index of element complexity (EC) was nothing more than an assessment of the average pseudograph element:

\[ EC = F/NE \]

Thus, given a map with 8 P and 1 TS we would have an \( NE \) of 9 and an \( F \) of 50:

\[ NE = 8 P + 1 TS = 9 \]
\[ F = 6(P) + 5(L) + 4(LTP) + 3(LEP) + 2(TS) + 1(AS) \]
\[ F = 6(8) + 5(0) + 4(0) + 3(0) + 2(1) + 1(0) \]
\[ F = 48 + 2 \]
\[ F = 50 \]
Now, of course, none of our six pseudograph elements has a value of 5.6, but the P has a value of 6 and the LTP a value of 5. Thus, the average complexity of the pseudograph elements on this map falls on the P side of a mythical pseudograph element midway between P and LTP. A map consisting of a single AS would have an NE of 1, an F of 1, and hence an EC of 1. The EC of 1 says simply that the average complexity of the pseudograph elements on this map is on the order of an AS.

The EC resembles the NE and the F in its ability to tell us something about the nature of an individual map. It is at once informative without being definitive. It is, however, the most definitive of the three measures discussed, though once again, this is true only within the confines of our particular data set. Thus a low EC does not necessarily imply a low NE but a low EC is never found on our maps without a correspondingly low NE. Thus, if a kid has drawn a map with an EC of 1, it invariably means, not that he has drawn any number of complete AS, but a single AS. As a rule, a great number of pseudograph elements tends to imply a great number of free floating points and lines. But this will become clearer as we investigate the results of this pseudograph analysis.

The application of this analytic technique uncovered a number of unanticipated problems, especially in regard to the criteria used to categorize map icons into the six pseudograph elements established above. For a complete awareness of what was involved, it seems vital to establish explicitly the criteria that were finally adopted. These are described below, pseudograph element by pseudograph element.

1) POINTS. A point is that thing on a map without linear, graphic or verbal characteristics. It may be simply the name of a point phenomenon (e.g. Soho Square) without associated graphic point (.) or a point with associated verbal tag (, TL) or an unidentified but obvious point (e.g. an unlabeled point next to Hughes Parry Hall and Cartwright Gardens which was obviously Commonwealth Hall) or a pictographic drawing (as of, say, the Tower of London). To consider a simple name a point, that name must appear on our point list or be capable of inclusion on that list. Thus "Carnaby Street" as a free floating phrase without associated graphic depiction, would not count as a point, but rather as a line. Names of areas were not considered in this analysis at all. The point must not be in any way connected to other elements such as lines.
2) **LINES.** A line is any labeled or unlabeled or simply verbal linear element with no terminal points, no embedded points, and no intersections. The line need not necessarily be a simple straight line and so may appear either —— or —— and so on. However, a line that appears —— is treated as a trailing subgraph even when the apparent vertices are not either identified by points or labeled. Readily identifiable bends, when correlated with items in the environment containing such bends, should be counted as trailing subgraphs in that they demand discriminations in looking and in drawing, equivalent to the discrimination necessary to become aware of and draw an explicit trailing subgraph. Examples of such bends would be those in the Thames, Tiber and Seine, the curve in Regent Street, the bends in the Via Veneto, the changes in direction of the Boulevard St. Germaine and so on. The difference between a smooth, shallow curve and these sorts of trailing subgraphs is completely a matter of subjective perception of degree, and is not susceptible to more objective definition. Fortunate it is, then, that such cases are relatively rare (most rivers have associated with them bridges which make them de facto trailing subgraphs).

3) **LINES WITH TERMINAL POINTS.** The criterion for these is a line (as above) terminated explicitly with a graphic or verbal point (likewise, as above).

4) **LINES WITH EMBEDDED POINTS.** The criterion for these is a line with associated point located on the line anywhere but at the ends.

5) **TRAILING SUBGRAPHS.** A trailing subgraph is that compage of points and lines in which at least one of the lines is not terminated explicitly with a point, either graphic or verbal.

6) **ACTUAL SUBGRAPH.** This is a compage of lines such that each line segment is terminated by either an explicit point, graphic or verbal, or by the intersection of that line segment with another line segment. In other words, intersections of lines are counted as points within an actual or trailing subgraph.

The entire technique is summarized in Figure 15.2. Reference to this figure during the discussion of the results will be helpful. The discussion is divided into two basic parts. First we shall distinguish classes of mappers based on the pseudograph measures, and sort the kids into the relevant classes. This first section will be concerned with problems of personality and motivation as they effect the maps. The second will deal with aggregations of the pseudograph measures and will
POINT (P)

LINE (L)

LINE WITH TERMINAL POINT (LTP)

LINE WITH EMBEDDED POINT (LEB)

TRAILING SUBGRAPHS

ACTUAL SUBGRAPHS

\[
NE = \text{Number of Elements}
\]

\[
f = 6(P) + 5(L) + 4(LTP) + 3(LEP) + 2(TS) + 1(AS)
\]

\[
i = \frac{f}{100}
\]

\[
egc = \frac{f}{NE}
\]

Figure 15.2 The six pseudograph elements and pseudograph measures.
examine the effect of the environments on the maps. Thus, the results of this chapter will be concerned with personality, motivation and environment as these relate to the maps.

II

Figure 15.3 shows the results of the pseudograph analysis for those individuals completing at least three maps of London. Shown in blue is the fragmentation index, in black the number of elements, and in red the average element complexity. The scale is in the same color as the appropriate line. The merest glance will reveal one thing: that as far as the pseudograph measures are concerned, the maps produced by the kids in Group L are highly variable, both from kid to kid, and for the most part from map to map for nearly any kid. If this measure shows us nothing else, it does show that the kids in Group L were individualists when it came to drawing maps.

A closer examination begins to reveal a certain order. If we concentrate on only one of the measures, the fragmentation index (shown in blue), things will be simpler. A line can connect three points in only nine ways. It can make a straight level line, or it can go up, or down, or up and down, or down and up, or straight and then up or down, or up and down and then straight. There are no other possibilities. Considering these possibilities we can discriminate and thereby reduce the number of possibilities from nine to five. This will be more manageable and reasonable, given our sample size. The five classes (or possibilities) are described below.

1) The fragmentation index decreases continuously from the first to the third map. This means that map organization is continuously tightening. The scale is from free floating points on map one to a single actual subgraph on map three. We also shall include in this class those maps whose F straightens out on the third map if the overall trend is clearly one of decrease.

2) The fragmentation index increases continuously from the first to the third map. This is the flip side of class 1 in every respect.

3) The fragmentation index increases from map one to two and then decreases from two to three. This means that map organization, initially tight, goes on to fragment, and then returns to a more integrated state. The scale is from AS to only P back to AS.

4) This is the flip side of class three in every respect.
5) In this class we shall consider those fragmentation indices which are straight lines, or very nearly straight lines. Increases or decreases are allowed only if they are small. The size of this allowance will be seen as we sort the maps. Theoretically a straight line could result no matter the level of organization of the map originally. Thus, it could consist at the outset entirely of points, and if the second and third maps had the same number of points, a straight fragmentation index would result. This is unlikely in practice for the following reason. If the number of points increases or decreases, the fragmentation index will go up or down. Reference to average element complexity will be necessary to ascertain what is really happening. However, if the initial map is a trailing or actual subgraph, and if subsequent maps are likewise, a straight fragmentation will result, although the number of lines and points within this subgraph may be changing violently. Thus growth in detail can result within an AS or TS while the fragmentation index remains stable. For this reason, Class 5 will likely additionally be characterized by very low NE and EC's.

Similar remarks about the behavior of the EC and the NE for each class may be made. Using the foregoing five classes allows us to sort any number of maps into a manageable number of classes.

In London only Baker and Bloch fall clearly in Class 1, that of increasing fragmentation. I add Mayo, Lincoln and Casyk to this class, even though their F's were close to constant from map one to two. Baker and Mayo were the closest of the pairs of kids on the trip, and were continuously closest to Miss Bloch. Furthermore, in all five cases there is an increase in the NE from map one to three and all the EC's hover in the vicinity of 5, or about on the order of an LTP. The general characteristics of this class are a median F which increases through the mapping sessions, a relatively stable EC, and an increase of the NE. In other words, the first map was relatively well integrated, perhaps as a result of the small number of elements utilized. Relatively contented with the initial effort, these mappers tended to add information to their initial effort, without really concerning themselves with integrating this new material into their initial schema. This is a mere sketch of a possible mapping strategy.

There are four entries in Class 2: Monroe, Cummings, Cruz and Nash. This class is further characterized by a lower EC, hovering between 4 and 5, and a steady decrease in the number of elements employed. The strategy employed by this class of mappers is simply the reverse of that used in Class 1. The first attempt at drawing a map is highly fragmented. Subsequent attempts at mapping are increasingly well integrated. In the case of Erica Cruz we have verbal confirmation of this
Figure 15.3  Fragmentation Index (blue), Number of Elements (black), and Average Element Complexity (red) for students completing at least three London maps.
strategy. She points out that in her initial attempt she loads her map with everything she recalls without regard to its integration. Figures 15.4 and 15.5 show her first and third London maps. True to her own assessment Figure 15.4 shows us almost all the items on the List of Places scattered over the map surface with beggarly attempts at integration. Cruz on her first London map shows us nothing more complex than two TS separated by the rest of the city. But how does she proceed? According to Erica, she starts dropping places on her second map (not reproduced) about which she is less certain, trying to increase integration among those places about which she feels some confidence. On her third London map she has reduced the number of places enormously, and has correspondingly increased the integration among the remaining elements. The map is now basically two trailing subgraphs, substantially elaborated from their initial appearance in London map one, separated by much less, cleaner space. (Some of the other startling properties of Erica's maps will be discussed later.) The tasks taken by the other mappers in this class are not identical. While they do not commence with the littering operation, they follow Erica in other respects, reducing elements, increasing their complexity in general, and gaining an increasingly integrated picture of London.

In classes 1 and 2 we see opposed approaches to dealing with the creation of a map of London. One starts in confidence and builds on that, resulting in increased fragmentation (Class 1). The other commences without confidence, then builds into increasing integration. The next two classes are combinations of these simplest situations.

In Class 3 we find only Eber and Palazzo. In both cases the F increases from map one to two and then decreases from map two to three, the NE follows an identical path, and there is a decrease in the EC from map one to two, although Eber's EC continues to decrease while Palazzo's returns to its original level. Generally the EC's are between 4 and 5 once again. This strategy may be characterized by a good start leading to over-confidence, followed by a return to caution. Notice that the F rises in response to the attempt to portray more things the second time around, and that the return to caution is accompanied by a decrease in the number of elements portrayed. Palazzo provides the perfect example of this type as her EC perfectly mirrors the rest of her efforts, while Eber's continuously drooping EC is less confirmatory, although it never drops all that far.

Class 4 is characterized by initial fragmentation followed by integration followed by a resurgence of fragmentation. The people included here are: Noyes, Giaconda, and Wood. Here the first attempt at mapping is not a great success, but the subsequent experience is
Figure 15.4 First London map of Erica Cruz
Figure 15.5  Third London map of Erica Cruz
carefully integrated with the initial material in the second mapping attempt. Cheered by this success one becomes overconfident on the third attempt, including places insusceptible of integration. A fourth attempt should be characterized by increased integration, and such is the case for Marina Giaconda. Figures 15.6 and 15.7 show the first and third maps of Marina Giaconda. Before looking at these examine closely her graph. She starts out quite fragmented and then reduces her map to a single Actual Subgraph. That is, from the fragmented beginning seen in Figure 15.6 she proceeds to integrate entirely the pseudograph elements on her second map. But in neither of these two attempts has she gone so far afield as the Thames. Encouraged by the success of her first two attempts, she retains, on her third effort, all the integrated materials of the second but now reaches down to include the Thames (Figure 15.7). On her fourth map (not shown) she elaborates the Thames into a Trailing Subgraph and tries to establish connections between that and the rest of her map.

Figure 15.8 is a reproduction of my first London map. Generally speaking, my mapping attempts followed those outlined for Marina, my first map comprising a single rather trailing subgraph. On my second map (not illustrated) I was able to integrate much of the material on the first map, but on my third attempt (Figure 15.9) I used that integrated subgraph as a matrix within which to locate additional detail not susceptible of integration. Thus I have attempted to locate Covent Gardens (CG) but was unable to tie this into the rest of the network. The same is true of the Battersea Power Station (BPS), the British Petroleum Building (BP), the Courts of Law (LC) and St. Paul's (SP). It is quite likely that had I drawn a fourth map I could have reintegrated the map by tying these points in, but that on my fifth attempt I would probably have gone afield again. Marina is a perfect example of this class, with her oscillations typified by gradually decreasing amplitude.

The fifth class includes five kids: Jencks, Abrams, Johnson, Watson and Pagan. This class is characterized by stability in strategy. Jencks and Abrams show straight lines for all map measures, while Johnson and Pagan show nearly straight lines, and Watson shows straight lines for the first three, moving from an AS to a TS on session three and subsequently to increased fragmentation. Class 5 is characterized by more than stability, however. It is critically characterized by very low EC's, never rising above 2 except in the instance of Watson's fourth map. This is tantamount to saying that the stable mappers in terms of strategies were those who commenced mapping with the most highly integrated forms available. This is not a necessary attribute of stability. One could easily be fragmented all over the place and still be stable. None was, however. Stability walked hand in hand with integration.
Figure 15.6  First London map of Marina Giaconda
Figure 15.7  Third London map of Marina Giaconda
Figure 15.8  Wood's first London map.
Figure 15.9 Third London map of Denis Wood
Figure 15.10 shows the pseudograph results individually for Rome. As a glance at the fragmentation index will show, the kids' mapping behavior in Rome was different from that in London. In the first place it was, after all, a different time and a different space. The London and Rome mapping sessions were separated by long days of experience. These days had brought changes in the kids and in the group as a whole. Nor can it be overlooked that on the day immediately prior to the first of the Rome mapping sessions I had gone over the kids' London maps with them individually. The differences between London and Rome can be briefly summarized:

1) The environment was different.

2) The individual kids were exhibiting changes in their personalities as they settled into the trip.

3) The group itself had changed, had become more solidified than it was in London.

4) Individual dispositions toward mapping had changed, this change being principally manifested in a greater eagerness to do "well."

This last issue was very visible and important. For example, several kids took notebooks with them on the all day sightseeing tour of Rome, and in these notebooks took notes of our route and in some cases made sketch maps. Two of these, reproduced as Figures 15.11 and 15.12, were drawn by Candy Fisher and Wanda Pierce. As these make clear, there was a great eagerness that had behavioral consequences. Another consequence was the rush to buy maps of Rome. Most of the kids had purchased such maps before the sightseeing tour had been on the road two hours. These maps had an interesting peculiarity in that they were printed with south at the top. This freak showed up that night in the mapping session where many maps were drawn with north and south flipped—unknowingly. This was later pointed out, but the image had in some minds become fixed, leading to disastrous confusions about the nature of Rome's spatial layout. What is critical is that the kids were ready and willing to map, and excited about the possibilities of doing it all right.

Given these changes in the physical and social environment, in the kids' personalities and in their motivation to map, it is to be expected (and hoped) that the kids would change pseudograph class in Rome.
It is the nature of the changes that is instructive.

Class 1. Susan Lincoln, Candy Fisher, Phylis Gordon and Bob Watson were the Class 1 mappers in Rome, and of these only Lincoln is a pure case, with initial confidence leading to the attempt to locate places whose relative location was not well known. A strong case could actually be made for including Fisher in Class 5, except for the fact that she has an abnormally high increase in fragmentation on the third map, and an EC that is entirely out of line, if not with the theoretical definition of Class 5, then with all the examples of Class 5 that we have seen.

Bob Watson likewise could be placed in Class 5, and with far greater justification than Fisher. His case is rather special and demands attention, for Bob had spent several days in Rome during the previous summer. He knew the city well. I observed Bob drawing his first map of Rome and we discussed it. Figure 15.13 shows this map and, as can be seen, Bob did not follow the point-line-area method at all. It is a distinctive product for Group L, with its lack of emphasis on lines and in its pictorial quality. His third Rome map is similar, simply including more points and even less lines (Figure 15.14). Increasing fragmentation in this case simply means more points. Bearing this out is the very slight increase in the EC. In other words, this is just such a case of being misled by the fragmentation index as was described in the introductory notes. If Class 5 were simply to describe invincible stability of purpose, Watson would belong there.

In Class 2 we have Cruz, Mayo, Eber, Giaconda and Pierce. Cruz is still pursuing her method of scatter and subtract that she used to such purpose in London. Erica represents another kind of stability, the kind that transcends the mapping of a single city. She may not approach the second map of a city the same way she approaches the first, but she approaches each city in the same manner. Wanda Pierce, in the pseudograph analysis for the first time, used her initial pre-mapping sketch to good purpose, and reduced the chaos of Rome to a single AS by the third map. Mayo, obviously worried by what she herself perceived as increasing fragmentation in the London maps has switched strategies to improve her product in Rome, and once again to good effect, for she too reduces the chaos of Rome to a single AS by the third map. Marina Giaconda, abandoning her oscillatory ways, began her mapping of Rome with practically no connections whatsoever and increased these with such vigor as to bring Rome to a single TS by the third map. Nor is Janine Eber playing a significantly different game; oscillation turns to fragmentation in an attempt to cram the map surface
Figure 15.10: Fragmentation Index (blue), Number of Elements (black), and Average Element Complexity (red) for students completing at least three Rome maps.
Figure 15.11  Pre-map sketch of Rome by Candy Fisher
Figure 15.12 Pre-map sketch of Rome by Wanda Pierce
Figure 15.13  First map of Rome by Bob Watson.
Figure 15.14 Third Rome map of Bob Watson
with Roman detail. So rich has her surface become that she is never able to bring it to total control, though both her NE and F fall somewhat to the third map from their Olympian heights. This class threw caution to the winds in the first Rome map hoping for a payoff in richness and detail, and then scrambled in the following map sessions to impart order and connectivity to the space of Rome.

In Class 3 we find Hendricks, Brown, Palazzo, Bloch, and Nash. Hendricks and Brown appear for the first time in the pseudograph analysis, drawing three maps in Rome in response to the general increase in motivation described above. Bloch and Nash have graduated to Class 3 after having been in Classes 1 and 2 respectively. Nash’s performance in Rome is only slightly different from London, though the trends are distinctive as can be seen in his NE. Bloch continued on her road of increasing fragmentation that she had commenced in London until her F hit the vicinity of 80, at which point she began a retreat. She also caught the motivation high and was intensely interested in the Rome mapping sessions. Palazzo was a Class 3 mapper in both cities, and like Cruz exhibits transenvironmental stability.

Class 4 mappers included Jencks, Casyk, Prinz, Montaigne and Seward. These last three appear in the pseudograph analysis for the first time, victims of the heightened motivation that infected the group. Jencks’ switched from Class 5 in London to Class 4 in Rome which was the most violent of all the shifts that took place. He went from F’s in London of 1 to Rome F’s running between 72 and 80. This is an artifact of Jencks’ misconstruction of the Environmental A mapping instructions in London which he believed asked him to arbitrarily connect all located points. When this was cleared up, Jencks’ map turned out to be highly fragmented. Furthermore, while the motivation of others was up, his was down, as indicated by his set of remarks made to me in Innsbruck (see Chapter 9), and his inability to occupy his position of group power prior to the Play (see Chapter 10). Prinz’s appearance in Rome also warrants attention. Karl, in company with Porter Portman, made a great show in London of mapping expertise. He had learned topographic field mapping with the Scouts, while Porter was, of course, fully acquainted with Army mapping techniques. Both viewed our simple point-line-area method with immense scorn and no little pity—until they tried to draw a map of London. Both were relative failures, but ashamed, then agreed on the trip into Rome to give it another try. Porter’s was again dismal failure, but Karl came through and continued to draw maps. He proved to have tenacity but little mapping talent and followed the Class 4 route to ultimate success. Seward, Montaigne and Casyk are archtypal Class 4 mappers in Rome.
Class 5 had four members: Abrams, Pagan, Cummings and Jane Brown. Abrams and Pagan are holdovers from London, and join Cruz and Palazzo in transenvironmental stability though neither of them were as stable within Rome as they had been within London. Finding Tracy Cummings in Class 5 is no surprise, since in London, following the Class 2 route, she had managed to bring her map to a single subgraph in the end. She simply retained that subgraph organization to handle her knowledge of Rome. Jane Brown’s appearance in Class 5 here is similar to Des Jencks’ Class 5 appearance in London, although Jane’s connections were withal less arbitrary. Rome was her only serious fling with the maps and she followed the mapping instructions to a T, naturally resulting in a single subgraph.

The Rome sessions revealed a higher order of mapping stability, that of transenvironmental stability. At least four kids indicated this sort of stability, Cruz, Abrams, Palazzo and Pagan. That is, they followed in Rome the identical strategy that they followed in London. It is quite possible that someone like Leslie Casyk could also join this group, not by virtue of any similarity in her approach to any two maps, but because her approach to each map is unique. She may be searching during her first seven maps for an approach that will carry her through the rest of the series. Her variations may be similarities in this sense. However, the maps provide no information on this point, and so variations must remain variations. This question of transenvironmental stability does, however, raise two points:

1) That the series of maps produced by a given kid must be examined in a continuous context across environments and through time to provide information about personal mapping strategies and styles.

2) That each additional map in this series is capable of causing enhanced analytic difficulty. Thus, it would be very simple to examine a single map produced by a kid and type it, and then announce to the panting public the discovery of TYPES of mappers. This has been done. However, on another map, a given kid may become another type. Then the problem of classification becomes more complex, more difficult, because organic and dynamic. This is the problem we face, and which the pseudograph analysis was designed to deal with.

* * *

There are only eight kids who completed at least three maps of Paris. These were three motivational classes in Paris: those not about to do the maps, those fervently eager to do the maps, and those who didn’t care but who could be persuaded. Obviously, the eight mappers
here considered fell in the latter two classes. None of these eight fell into pseudograph Classes 1 or 2, so our discussion will commence with Class 3 (see Figure 15.15).

Eber, Monroe, Casyk, Palazzo and Gordon fell in Class 3. Palazzo completes her transenvironmental stability series by being in Class 3, for the third time; and while Eber was a Class 2 mapper in Rome, she had been a Class 3 mapper in London, so that this is not her first appearance in this class. If Palazzo is a text-book case of a Class 3 mapper, and Eber is slightly overdone, Monroe is even more so, her fragmentation index running way off the graph on the second Paris map. Gordon is like Palazzo, a text-book case. Casyk illustrates a Class 3 mapper who has gone on to a fourth map and her fragmentation index lends support to our hypothetical sketch of the continued behavior of a mapper in this class.

There was only one Class 4 mapper in Paris: Marina Giaconda, and she is an excellent example, starting off fairly fragmented, only to rebound into enhanced fragmentation as she continues to amass knowledge of Paris. Pagan and Abrams fill Class 5 in Paris and complete their own transenvironmental series, having remained in this Class from their first appearance in London.

* * *

Below we have listed all of the kids that drew at least three maps of any city, and beside them we have listed the pseudograph class into which each fell in a given city. It is quite possible that you have assigned a given kid to a class other than that to which I have assigned him according to your interpretation of the data. In this case, I suggest that you make appropriate changes on Table 15.0.

**TABLE 15.0**

**KIDS RANKED ACCORDING TO MAP STRATEGIES**

<table>
<thead>
<tr>
<th>KIDS</th>
<th>London</th>
<th>Paris</th>
<th>Rome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candy Fisher</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Betty Baker</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Susan Lincoln</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Claire Mayo</td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Phylis Gordon</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Leslie Casyk</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Wanda Pierce</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Erica Cruz</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
Figure 15.15  Fragmentation Index (blue), Number of Elements (black), and Average Element Complexity (red) for students completing at least three Paris maps.
There are two possible justifications for the creation of a table like this: 1) that the mapping strategies bear genetic relationships to each other; and 2) that mapping strategies bear some interesting relationship to some aspect of the personality or behavior of the individual kids. Both points will be made.

1) The mapping strategies do bear genetic relationships to each other. Class 1 and Class 2 are genetically prior mapping strategies, and in the end are integrated into higher types. Thus Class 3 shows increasing integration (Class 2) in alternation with increasing fragmentation (Class 1), while Class 4 shows the opposite combination of Classes 1 and 2. Class 1 is not a successful strategy since it leads to less and less useful products. Of the five people who commence in Class 1 and continue mapping (Miss Bloch is the fifth—not included on the table), four of them move to higher order classes. Only Susan Lincoln follows this strategy in more than one city. Furthermore there is only one case of a reversion from a higher class to Class 1, and that is the special case of Bob Watson which has been discounted above. The evidence is fragile but clearly points in one direction: having once created a series of maps that become increasingly disconnected, the kids did not repeat the process. Thus the process is prior for people who use it once. It is prior in another sense as well: all of our maps exist at some point in their construction in this state of fragmentation, increasing from second to second, as points are added to the surface faster than they can be connected.
Class 2 is the basic connecting strategy, and yet by itself is as undesirable as Class 1 in that it postulates a highly fragmented first map, or a useless beginning. Of the four kids commencing with this strategy and continuing to map, three of them move up to higher order strategies in subsequent cities. Furthermore, there are only two reversions to this type; Marina Giaconda and Janine Eber, in Rome. (Note that all three instances of reversion to Classes 1 and 2 occur in Rome.) The evidence is no more substantial here than it was for Class 1 and yet the tendency is clear: once this strategy has been tried, it has been abandoned. Clearly, this strategy is subsequent to Class 1, for until there is scattered, pointilistic, instantaneous knowledge and experience, there can be nothing to integrate.

A Class 1 mapper approaches an environment with preconceived notions about its layout and reality and allows his mind to be blown by experience—along with his map. The Class 2 mapper approaches the environment with a tabula rasa and allows experiences to crowd in, to be sorted out and integrated with continued experience. Class 3 and 4 mappers approach an environment neither in so blank nor so organized a fashion. The hallmark of both strategies is the ability to integrate or fragment as experience and the environment demand. Class 3 tied for most popular Class, contained one transenvironmentalist (Palazzo), as well as one who used the strategy in London and Paris (Eber). This strategy allows you to approach a city with some integrating image in mind that holds it all together for the first map. Then you have a framework on which to load detail of uncertain location. A Class 1 mapper at this point would continue to add detail and still more detail, but the Class 3 mapper cries "Whoa!" and reintegrates, to provide a viable framework for the next assault of the senses. And so on. Leslie Casyk in Paris shows us what four maps in this strategy would look like. Class 4 is the opposite side of the coin. Experience precedes image for this Class mapper, but an integrated image always follows the initial harvest of pointilistic information. And then this image provides a base for further garnering. The two classes are very similar and very popular. More kids used these two classes than 1 and 2 put together and certainly many more than Class 5. This is as it should be, for most of the kids were trying to come to grips with the mapping problem. Naturally they adopted the most flexible and efficient strategies, those allowing for continual experimentation, and those which, at the same time, admit of frequent, alternating integrated success.

Class 5 is the classy class and as is always the case with class it has its drawbacks along with its elan. It was as popular a strategy as Class 3 and contained two of the three transenvironmentalists:
Pagan and Abrams. It should not be surprising that the most stable intracity strategy was also the most stable intercity strategy. However, Class 5 allows of no experimentation. You either have it or you find yourself in another class. Of those commencing in a lower class only one, Tracy Cummings, jumps up to Class 5. As we pointed out earlier, a Class 5 mapper's first map is generally an actual subgraph (never less than a trailing subgraph). There is a subtle reason for this and it involves the advantages and drawbacks of this strategy. To draw a complete actual subgraph first time out means something. In the case of all but one of those drawing Class 5 maps in London it meant that they had to ignore much of their experience. Only Pagan dared to include the Thames. There was simply no way for these kids to include everything that they saw, and still connect it all up. So they didn't. The very opposite of Erica Cruz who included it all at the beginning. Class 5 mappers include only those parts of the city that they have mentally integrated. On following maps the Thames appears on the third map of Jencks and Watson, and never appears on the maps of Abrams and Johnson. To have included the Thames earlier would have meant fragmentation, experimentation. These mappers do not go beyond the known. But if Class 5 does not include experimentation, it uniquely allows growth. Class 5 maps grow one to the other before your eyes like animation stills. The maps of David Abrams are the outstanding example. He maps in each session only those things he can integrate and consequently his map seems to grow organically, larger like a body. Other class maps grow too: grow more detailed or less detailed or more linear—but always within an established frame of space. David starts out around home, and then moves out from there to encompass increasingly large areas, all neatly and veridically connected. This strategy provides the greatest likelihood of turning out useful products at each stage of the mapping process, but demands a well-worked out and highly formalized approach to mapping. It means that that waffling integration-fragmentation has been accomplished in mapping work elsewhere or overcome as the result of some characterological trait. For Class 5 mappers, not only is the map integrated but the mapping operation is integrated and has been integrated personally.

To summarize: Classes 1 and 2 are unsatisfying, genetically prior mapping strategies, 1. because it commences with an image that proceeds to disintegrate, 2. because it starts with disintegration. Both strategies result in the minimal number of satisfying, useful products. Classes 3 and 4 are both flexible and frequently satisfying, and integrate the two lower orders allowing the naive mapper to work on an approach to mapping that will work. Class 5 results consistently in the best maps, is the most efficient, but is absolutely inflexible, demanding a stable strategy worked out prior to actual mapping. A mapper moves from Class 1 or 2.
or both, to Class 3 or 4, and finally ends up in Class 5. Learning to map is like learning any other language.

2) Mapping strategies are related to other personality traits. The argument needed here lacks certain critical pieces of evidence. These are to be found in Chapter 19. There it is shown that mapping strategies relate to seat location on the bus, to number of seats occupied during the tour, and to the number of kids sat next to during the tour. Briefly, the higher the class of mapping strategy, the more mobile the seat behavior and the more likely the kid is to sit in the middle of the bus; the lower the class of mapping strategy, the less mobile the seat behavior, and the more likely the kid is to sit in the front of the bus. The median case is too complicated to present here.

But without this corollary information there are certain remarks that we can make. Certainly Figure 15.0 is impressive evidence that there is something in the kids that relate to their use of mapping strategies. To interpret this table let us try to argue that it shows that mapping strategies are related more to variations from city to city rather than kid to kid. In the first place we might expect to see that a given strategy was more likely to be used in a given city. But this is not what we find on Table 15.0. There is no significant variation in the numbers of kids employing a given strategy for London and Rome. The variations existing between Rome and Paris can be explained, not on environmental grounds, but on genetic strategic grounds. This is not to say that the environment exerts no influence, but rather that it cannot explain the choice of mapping strategy.

Another argument that could be advanced to explain the choice of mapping strategies would be that of motivation and learning. Certainly motivation and education played important roles in the project. However, while motivation can explain the increase in the number of mappers drawing at least three maps in Rome, neither motivation, nor education can explain the lack of systematic variation between the choice of Rome and London strategies. Furthermore, motivation and education can be advanced as still other parts of the explanation for the lack of Class 1 and 2 mappers in Paris. That is, motivation and education can explain the variation in numbers of mappers far more readily than it can explain the choice of strategies per se. This is not to say that motivation and education play no role in moving a mapper out of Classes 1 and 2, but rather that this role is circumscribed. Furthermore, motivation (and likely learning) is a personality trait.

The most valid remaining possibility is that mapping strategy choice is related to personality. Leaning on the anecdotal knowledge of
the kids gained in Chapters 6 through 12 can allow us to assess what some
of these relations might be. Speaking solely in terms of group significance,
for example, it might be pointed out that the group leaders—Watson, and
especially Jencks—are Class 5 mappers; that Pagan, who had the power
to carry on with the project after Rome, was a Class 5 mapper; that
Abrams, who had the maturity to talk about his travel cycle after two
days in London, was a Class 5 mapper. That is, Class 5 mappers
exhibit certain types of maturity, and seem to have an inflated sense of
control, of themselves and others. At this point, the evidence is tenuous,
but cumulative.

At the other end of the scale Class 1 mappers seem to be,
particularly socially, somewhat immature. There can be little question
that Fisher, Baker, Lincoln, Mayo and Gordon lack comfort in the social
setting of the tour. Recall Gordon’s conversation about the Rhinish
castles; Fisher’s drunk scene in Innsbruck; the clannishness of Lincoln,
Baker and Mayo; their inability to effectively participate in the Roman
events, or to effectively articulate their reasons for withdrawal. These
are polar opposites to the activity and articulateness of the Class 5
mappers listed above. It may be difficult on the evidence to advance hard
opinions, but it must be easy to see that the variations between the kids in
choice of mapping strategies have parallels in other behavioral contexts.

At this stage we can do no more than assert the fact that
personality differences are better explanations of variations in choice of
mapping strategies than any of the other explanations advanced.

III

In this final section we shall present evidence concerning the
effect of the various environments on the behavior of certain pseudograph
measures. Most of this evidence is of an aggregate nature. However,
there is some individual evidence.

1) Individual evidence. This has been presented in the
foregoing section. The evidence concerns shifts in strategic choice
between London and Rome, and Rome and Paris. While it was pointed
out above that the environment played a limited role in the choice of
strategy, it was not pointed out just what this role was. First of all, all
reversions from Class 5 to a lower class took place in Rome. In the
second place, the kids employing identical strategies in Paris and London
both dropped to lower classes in Rome. This evidence is extremely
fragile, and yet supports the contention that Rome was a more difficult
city to cognize than was London. There is no contradictory evidence.
The lack of Class 1 and 2 mappers in Paris—although this lack can be
Figure 15.16  Average number of elements for the London maps by element and map for all Group L maps (n-88)
Figure 15.17  Average number of elements for the Rome maps by element and map for all Group L maps (n=88)
explained, perhaps more readily, on genetic grounds—is here adduced as supporting the contention that Paris was easier to cognize. There is no other individual evidence that speaks to environmental influence from the pseudograph analysis.

2) Aggregate evidence. The following three figures show the average number of each element for each map per city.

Figure 15.16 shows this for London. One thing that is striking is the way free floating points escalate in number after a serious drop on the second London map. Thus on the second London map there were 3.7 points per map, while on the fourth there were 7.5. This speaks of more sensory inputs than could be organized and integrated into an overall schema during the week in London. More was seen than could be intelligibly handled. Lines rise correspondingly. More roads were walked, passed, than could be connected. The sudden spurt on the last two sessions speaks of a desire to get it all down before it was too late, and thus there is a drop to zero of the intermediate elements, and a small, but noticable slackening in the use of trailing and actual subgraphs. London itself had a great deal to do with this, for these results are not paralleled in either Paris or Rome.

In Figure 15.17 we see the average number of elements per map for Rome. Comparing these figures with the London figures brings out several salient points. In the first place scant differences exist between the last four elements in the two cities. The average number of LTP's and LEP's drops sharply, while the number of TS's and AS's are slightly lower in Rome than London. When we turn our attention to the comparable sets of maps it is uniformly and significantly higher in Rome. The variations in the number of Rome points is nothing like the variation that we find in London. In the second place, the number of lines falls off in Rome, rather than growing as in London. Understanding the intentions of the kids to produce "good" connected maps in Rome, this is unexpected. The explanation of this anamoly must be sought in the other element of the kid-city interface, Rome.

And Rome certainly does demand a glance. Of the three cities involved in the extensive map operations, Rome is far and away the most difficult to cognize. In fact, it may not be too much to say that with the exception of a city like Tokyo, Rome is the most confusing and least well organized of the major cities of the world. Conceivably, this could be related to its ancient history, for it is probably the oldest of the world's major cities as well. It is at least a thousand years older than Paris or London, and in fact had been built and rebuilt (386 B.C.) before Paris or London were even sizable settlements. Descriptions of Rome at every
one of her ages emphasize the mess of the city. Thus Gutkind on Imperial Rome: "Rome continued on her way of disorder, or neglect of the justifiable ambitions of the masses, and in the self-deception that innumerable unrelated details would make an organic whole" (Gutkind, 1969, 423). Rome burned under Nero and was once again rebuilt (64 A.D.), just as chaotically, though with widened streets. With the arrival of the Christian era the focus of the entire city shifted, from the old Roman center, to the urban periphery where San Giovanni in Laterano (in the SE) and the Castel San Angelo and the Vatican (in the NW) were located.

Under Sixtus V, Rome began to rebuild itself all over. The plans of Sixtus are musts in the urban planning business (see Bacon, 1967, 117-147, for a peculiarly adulatory example) and yet I find myself in sympathy with Gutkind who writes: "Why the admiration of the plans of the popes is almost a 'must' is difficult to understand. They were a rather haphazard conglomeration of unrelated details..." (Gutkind, 1969, 433). What they actually amounted to was a city with a plethora of centers, none of them wielding sufficient visual or functional authority to declare itself the center of Rome. In the 19th Century the French took over the city and reworked it, along lines better intentioned, but even less functionally successful; and of course Mussolini took a hand, building, for instance, the God-awful Via della Conciliazioni.

Thus a tourist in Rome is confronted by a city without a center, or several centers all shouting to him with equal strength. It is difficult not to accede to the authority of either St. Peter's, or the Piazza del Popolo, or the Piazza Venezia, or any of the other centers and there are many. In addition to this is the manner in which all variety of monument has been slapped next to one another. Thus we find absolutely adjacent the contemporary Monument to Vittorio Emanuele, the Baroque Piazza del Campidolio, and the Roman Forum. Each is a perfect and articulate spokesman for its own time, but none of them speak for Rome. The result is a visual cacaphony that is difficult to cognize. And yet each of the centers, each of the monuments is an eye-catcher in its own right. Consequently the naive mapper ends up with a mind filled with points, each unrelated to each, and none connected together by a visual or intelligible network of streets.

The streets are the greatest difficulty of all for few of them run for more than a few blocks. The ones that do, like the Strada Olimpica and the Via Aurelia, give the impression of actually comprising a number of disjoint streets tied together by a common name. Thus they lack a character of their own and become difficult even to follow. The plans of the popes exacerbated this difficulty, slashing across preexisting street patterns with gay abandon. For all the intricacy of London, major streets had identifiable characters and wandered in given directions, and
Figure 15.18 Average number of elements for the Paris maps by element and map for all Group L maps (n=37)
underlying its pattern was a felt north-south, east-west grid. Nothing underlies the pattern of Rome but ages of poor planning and the resultant compage is a nightmare. Now it is obvious that an exploratory system that operates in New York, or even London, will be of absolutely no use in Rome. Likewise, a mapping strategy that might have achieved laudatory results in London, has no chance whatsoever of success in Rome. And since we are looking at the interface of the kids (in flux) and the environment (totally different) we must anticipate the sorts of results we in fact found. This is a case when new bottles are demanded by new wines.

I suggest that the greater number of points is a direct result of the pointilistic character of Rome and that the lesser number of lines directly reflects the invisibility of an organic street pattern.

Figure 15.18 shows the average number of elements for maps of Paris. Four distinct features demand attention. Unlike London and Rome the number of points rises continuously. The LTP's rise on the third set of maps, while the AS's fall to zero. These anomalies, which are not overwhelming, may well be a function of either the small sample size (only eight kids) or the unusually high degree of motivation for these mappers (of not perfectly understood consequences). The average number of lines also behaves erratically here, and this is principally the result of the frequent occurrence on the second and third Paris maps of the twelve streets radiating from the Place de l'Etoile, all being drawn but none connected to anything else. With some justification these streets might have been regarded as point attributes, more a remark about the Place rather than streets in their own right. We have chosen to regard them as streets to preserve consistency in dealing with graphic content.

This is not, however, the whole of the explanation, for in point of fact, where Rome was a pointilistic city, Paris is a linear city, the city par excellence of boulevards and rues, and it is these that grab and absorb attention: St. Michael, Champs-Elysees, St. Germaine, Rue de Rivoli are but a few of the famous streets of Paris, the city known for its streets as no other city is. To an extent this linear character was insured by the work of Haussmann in the 19th Century, but it also resulted from a long history of linear development. The work of Haussmann is like that of Sixtus VI, ordinarily much praised by planners. In Paris it is, however, also vocally and self-consciously praised by Parisians and tourists alike.

If environmental differences were the major explanation for intercity variations, we would be unable to see connections between this
aggregate analysis and the earlier individual analyses. This, however, is not the case. In fact, the rise and fall of certain elements can be clearly related to the preponderance of one or another mapping strategy.

IV

Our conclusions are short and simple. The issue of the connectivity and degree of integration of the map surface is important, perhaps central to any discussion of mental maps. If the maps were susceptible of graph theoretic interpretation, it would be a powerful tool in this analysis. Unfortunately, our maps were not amenable to such analysis. The pseudograph provides an interesting and valuable surrogate. Using this device we are able to come to certain understandings of the relation of personality (subsuming learning and motivational attributes) and environment to mapping. In our analysis we have emphasized the explanatory power of the personality inputs, deferring final discussion of this issue until Chapter 19, while pointing out that the dynamics of integration among a series of maps can be sorted into five classes, which classes have certain genetic attributes and personality correlates. Nonetheless, it can be shown that environmental variations do play a measurable role in the process of mapping novel environments.
American visitors to London often attain to quite remarkable familiarity with many of its features. But their accomplishments in this respect do not usually extend to an acquaintance with its intimate geography. The reason is simple enough. He who would know London, or any other great city, in the complete and intimate fashion characteristic of the genuine Town Sparrow, must habituate himself to the use of that old fashioned conveyance known as "shank's mare"...

Now, the American visitor is not usually a pedestrian. As time appears to him more valuable than his money, he tends to cut the Gordian knot of geographical difficulties by hailing a taxi; whereby he makes a swift passage at the sacrifice of everything between his starting-point and his destination.

...R. AUSTIN FREEMAN
Dr. Thorndyke Intervenes
While the two preceding analysis techniques have been rather dissimilar, they have had one thing in common. The content analysis through aggregation and the pseudograph analysis by abstraction have removed us greatly from the maps themselves. In the light of our discussion of Chapter 13, it might be noted that in the last two chapters, our event of interest has become the map, not the trip, and our trace events have ceased being the maps to become the results of the particular analysis technique employed. In this chapter, we shall look at parts of the maps themselves, and shall consequently be studying as the event of interest certain aspects of the trip experience itself.

The particular analysis technique employed in this chapter grew out of a hypothesis made in the predeparture phase of the project. At that time we were laboring under the assumption that there was in fact a real world that, under certain assumptions, could be seen by anybody. This real world was represented on certain maps that we considered to be veridical, that, in other words, represented the real world as it actually was. In this instance, it was meaningful to ask how close the sketch maps of the kids approximated a veridical image, and it likewise seemed reasonable to postulate that the maps of the kids would become increasingly proximate to this veridical image through time, with their increasing experience. Since we expected to be able to make remarks about the degree of veridicality of the maps, we termed this analysis the veridicality analysis. This analysis has been undertaken from two directions, one in the following chapter, and the subject matter of the chapter in hand.

The question of establishing the degree of veridicality on a given map is hedged about with the most immense difficulties. Many investigators have declared the issue to be of absolutely no interest, or have skirted or otherwise avoided the issue. For example, Lynch writes:

To compare with these subjective pictures of the city, such data as air photos, maps, and diagrams of density, use, or building shape might seem to be the proper "objective" description of the physical form of the city. Consideration of their objectivity aside, such things are entirely inadequate for the purpose, being both too superficial and yet not generalized enough. The variety of factors which might be evaluated is infinite, and it was found that the best comparisons to the interviews was the record of another subjective response, but in this case a
systematic and observant one, using categories which had proven significant in the analysis of earlier pilot interviews. While it was clear that the interviewees were responding to a common physical reality, the best way to define that reality was not through any quantitative, "factual" method but through the perception and evaluation of a few field observers, trained to look carefully, and with a prior set toward the kind of urban element that has so far seemed to be significant. (Lynch, 1960, 143)

This passage is extremely important for a variety of reasons. In the first place, we have not pushed aside the question of the objectivity of maps, air photos and the like; we know them to be no more objective than any other depiction of reality, though perhaps vastly more consensual. Lynch, with his use of quote marks around the world objective, would seem to subscribe, to one degree or another, to this point of view. Nonetheless, Lynch feels compelled to compare his sketch maps and other information about the city with something. One might, obviously, ask why it is necessary to compare them with anything at all, and it is certainly worthwhile to ask why, if we must compare them with something, we use what can be readily characterized as elitist subjective responses.

The answer is at once simple and complex. In the first place, one is impelled to investigate mental images only because it is suspected that the deviance of the mental image from the veridical image has important behavioral consequences. As we noted in the Introduction, it is the consideration of the behavior that makes the study of perception and cognition meaningful. In seeking to explain the behavior, Lynch hypothesizes, and finds, variation between the real world and the mental world in which we live. Thus, from the beginning, two worlds are accepted. In the section quoted above, Lynch subsumes the idea of the real world in the phrase "common physical reality." The other, mental, world is subsumed by the phrase "subjective pictures." The necessity in comparing these two worlds arises from the fact that it is the differences between these worlds that is being studied. Lynch states this explicitly: "From the data provided by the comparison of these group images with the visual reality, and from the speculations arising thereon, most of the remainder of this book derives" (Lynch, 1960, 16).

Thus, in the beginning of his book, Lynch knows that it is the comparison of the sketch maps and verbal materials with the real world—the "common physical reality," the "visual reality"—that must be the basis of his book. But toward the end, when he comes face to face with the task of comparing his group images with some objective correlate, he
seems to cop out, to consider the physical reality insusceptible of measurement. And yet, he has no trouble achieving his initial goal throughout the book. For example:

Most people missed the curve in Massachusetts Avenue at Falmouth Street, and confused their total map of Boston as a result. They consider Massachusetts Avenue to be straight, sensed its right-angle intersections with a large number of streets, and assumed these streets to be parallel. (Lynch, 1960, 56)

It is only when he has to consider systematically comparing a group of sketch maps and verbal responses with the visual reality that he decides the task to be inappropriate, the objective descriptions to be both too superficial and not sufficiently generalized. Another strike against the sincerity of his final plea is that his book is crammed with "objective" descriptions: six airphotos, seven objective maps, and twenty-five other photographs.

Thus, in considering the validity of Lynch's claim that comparison of mental images with objective correlates is inappropriate, we must bear in mind that 1) Lynch explicitly contradicts this position at the outset; 2) Lynch expends a great deal of his effort making such comparisons throughout the book; 3) Lynch considers the use of airphotos, maps and other photos of sufficient value that he includes numbers of these while discussing the subjective images.

It is necessary, therefore, to seek another explanation for his failure to make such systematic comparisons as would be needed to bear out his original intentions. Reference to all the other studies enumerated on page 67 of this report which have employed or reported work done using sketch maps, will not help. To an individual author, they have significantly failed to make such comparisons, with one fairly fruitful exception: the imaged extent of neighborhoods, barrios, downtowns and the like have been compared with some "objective" assessment of extent. (See especially: Wood, 1971, Chapters 3 and 5; and Stea and Wood, in press.) With this exception, the failure to make such comparisons is all but universal. Why?

BECAUSE THE TASK IS ENORMOUSLY DIFFICULT. There are many reasons for this. 1) The question of what shall represent the real world is impossible to decide. Lynch accurately points out that many such stand-ins suffer from superficiality and lack of generalization, and that the variety of factors available for comparison is nearly infinite.
Further matters causing difficulty here are questions particularly of viewpoint (e.g. your average citizen does not habitually view the world from an airplane; the world varies depending on whether seen on foot or by car and of temporal variation, a fact of life, seldom considered in mapping, et cetera). Thus, the question is: to what shall we compare our sketch maps? 2) Were it possible to determine the previous question, your problems would just begin. How would all your sketch maps be reduced to a comparable scale? 3) More basically, how do you determine the scale of a sketch map? 4) How do you determine the projection used by the sketch mapper? Until these last three questions are answered, you have no basis of comparison. The enormous difficulty of this task boils down to two major issues, the first of which has to do with the nature of the objective correlate, and the second of which has to do with making the sketch maps comparable both one to the other and thence to the objective correlate. The simple reason that no one has performed a veridicality analysis up to now is because it is more difficult than the probable results are worth, and because, as Lynch has shown, it is easy to rationalize not doing such an analysis.

I doubt seriously that such an analysis would be attempted here were our sketch maps and project goals not of such a nature as to demand such an analysis. We have collected maps sequentially through time, and would like to test our hypothesis that increased experience leads to increasingly veridical views of the world. Unfortunately, or as the matter turns out, fortunately, we have been forced to abandon the concept of veridical objective Platonic reality. In the general case this was discussed in the Introduction, and the specific case as regards maps was dealt with in Chapter 2. There you may recall, it was shown that all maps are mental maps, among which classes could be distinguished on the basis of consensuality. We discussed three categories of maps: the individual mental map, the map consensual to a small group, and the standard map, or that map consensual to the greatest number of individuals. Thus in place of the concept of veridicality, we substitute the notion of consensuality. Can this notion help us out of our hole?

Indeed, it might have been designed expressly for the task, for to test our hypothesis it needs only to be shown that the sketch maps become increasingly consensual with increasing experience. That is, that increased environmental experience leads to increasing consensuality among a group of mappers. By the substitution of the notion of consensuality for that of veridicality, we have obviated the difficulty that Lynch discussed; that of deciding what to use as representative of the real world. The real world, in our analysis, will be represented by the consensus of all the sketch maps, and deviance from the real world shall then become a function of individual deviance from the group standard.
Thus, Lynch's problem has gone up in smoke along with his notion of some Platonic reality.

The other difficulty remains. That is the question of just in fact how we are to compare the sketch maps with one another to derive the consensual image, given the horrendous obstacles of unknown scales, projections, surficial variation and so on. In approaching these problems I was struck by the fact that even if these issues were resolved, the maps would present certain difficulties of comparison due to the lack of sensible consensuality—map to map—in terms of nothing but content. Very few things were mapped in common by the entire group. (In point of fact, no specific environmental feature was ever mapped by everyone in Group L, and only one generic feature—pubs—was mapped by all the kids at a given mapping session. It is impossible, obviously, to compare the relative location of generic features.) So rather than pursue some theoretic dead end, I decided to ignore the issue of scale in its general aspects, and I concentrated my attention on those few items that appeared on the greatest number of maps. Naturally, some of these were points, some of them lines, and some of them areas. Let us consider them one at a time.

Points. The most frequently mentioned items common to the greatest number of maps were landmark points. How is it possible to compare the relative location of one point to another? Assume for a moment that every kid had mapped The Tower of London and Piccadilly Circus. Can we make any remark about the location of these landmarks relative to one another? Baldly: no! Why not? Well, how would you go about doing it? Were you comparing standard maps it would be a snap. You would be provided with many frames of reference whereby to compare the relative location of these points. In the first place you would have a scale that would allow you to control for scale. In the second place, the standard maps would have orienting coordinates, or at least compass roses to allow you to align the maps to be compared. Neither of these frames of reference is present on a sketch map, and where present raise questions of reliability. Basically, they are not there. In the absence of any frame of reference it is impossible to make any remark about the relative location of two points which would not be tantamount to establishing a frame of reference, and then reintroducing this frame of reference as a control. Furthermore, it would always prove that the two points in question were in relatively identical positions. Dead end.

Consider then the issue were three points mapped in common by the entire group, adding say, Oxford Circus. In this case two of the points could arbitrarily be considered the frame of reference and the relative location of the third point could be established as a function
of the first two. This assumes that the two points used as a frame of reference are in fact in identical positions, which is preposterous, but unavoidable. At least we would have the ability to say something about the relative locations of the three points. But it must be clear that at least three points are demanded to make such an analysis. Did we have three such points? No.

Lines. A line by its nature constitutes the same sort of reference provided by two points. Thus we could take a frequently mentioned line, say Euston, and bring all the exempla of Euston to assume a constant length and bearing, and then examine the behavior of any other commonly mapped point, line or area. Or, rather than make the length of the line constant, home in on a closely associated and frequently mentioned point, line or area. Could any of these conditions be met with our data set? Yes, several of them were there.

Areas. Areas could be the potentially most useful anchor for our aggregation were it not for the ugly problem of shape. If an area, say Hyde Park, showed up on all our maps, and it assumed a common shape such that the areas all could be superimposed on one another after being controlled for scale, then a single area could provide a frame of reference for any other commonly mapped item. Unfortunately, Hyde Park, which was mapped by nearly everyone, assumed the most fantastic variations of shape that its use as an anchor was impossible. (To compare areas otherwise demands the use of a frame of reference such as two points or a line or a system of orienting coordinates. In other studies where areas are compared, these have been mapped onto a standard base map which provides this frame of reference.)

There is another set of reasons than the pragmatic one above set forth that insists on our zeroing in on lines in preference to the other choices. In The Child's Conception of the World, Jean Piaget discusses the varying reliability character of verbal responses made by children from his perspective as a clinical psychologist. He states that verbal responses can be placed each into one of five classes. These five classes are: 1) Answers at random; 2) Romancing; 3) Suggested Conviction; 4) Liberated Conviction; 5) Spontaneous Conviction. An Answer at Random occurs when "the child appears uninterested in the question," and the child "replies at random with whatever first comes into his head," Romancing is when "the child, without further reflection, replies to the question by inventing an answer in which he does not really believe." However, "when the child makes an effort to reply to the question but either the question is suggestive or the child is simply trying to satisfy the examiner without attempting to think for himself, we shall use the term suggested conviction." Liberated Conviction is when "the child replies after reflection, drawing
the answer from the stores of his own mind, without suggestion, although
the question is new to him." Finally, Spontaneous Conviction occurs
when the "child has no need of reasoning to answer the question, but
can give an answer forthwith because already formulated" (Piaget, 1969a,
10-11). Piaget's schema has great potential value for the study in hand,
and could easily have been brought into play in the last chapter. For
example, Class 5 mappers might have been said to have been exhibiting
Spontaneous Conviction, while Class 1 might have been said as displaying
Answers at Random, and, in fact, it might be interesting to speculate
whether all our sketch maps weren't in reality examples of Suggested
Conviction and so on. But Piaget's schema is not our concern here,
whereas his approach is. He used the schema to separate the dross
from the gold, rejecting as useless all responses that were not either
Liberated or Spontaneous. I have no intention of adopting his schema,
but I do wish to adopt his approach.

Thus, I argue that lines are more appropriate features on which
to build a consensual image for the same sorts of reasons that Piaget
relies on Spontaneous and Liberated Convictions. In this argument, we
must turn our minds back to the preceding chapter and consider what
turned out to have been involved in the location of points, versus lines,
versus trailing and actual subgraphs—of which the commonly mentioned
lines are generally a part. We saw that points demanded the minimal
input from the mapper, and in the specific case of Erica Cruz that the
location of points was in fact a sort of romancing answer-at-random
affair, with suggestion being provided by our List of Places. We also
saw that as she progressed from map to map that the number of points
displayed atrophied glaringly, and that the number of lines increased
markedly, absolutely, but especially as a relative function of all things
mapped. Arguing from her specific case, and from the conclusions of
the last chapter generally, I concluded that such elements of randomness
operated in respect to the location of points on the map generally as to
make them unfit—in isolation—as anchors for the sort of analysis we
have in hand at the moment. That is, the three points needed for a
pointilistic analysis are not only not available, but were they so, we
would not choose to employ them for the reasons just sketched.

To a substantial extent, the same is true with respect to areas.
Not that they don't demand enormous input from the kids, both in the act
of areal recognition initially, and in the process of drawing them on the
map overlays, but that because they make such demands, and because
areal boundaries are subject to so many interpretations (see Wood, 1971,
Chapter II for an exhaustive discussion of boundary problems), and
because many areas are entirely matters of subjective response, that,
for these reasons, areas would likewise provide poor anchors for the
analysis here contemplated.

Which leaves us with lines. The definition of a linear item in the environment is not usually susceptible of the sorts of problems that plague areas. Their edges are definite and have obvious consequences. Violation of the edge of the Thames in a similar manner can result in death by drowning. In this respect, lines are superior anchors to areas. On the other hand they demand much more from the student than do points, and are less likely to be randomly placed on a map. Points are, and can comfortably nestle on a ground of white. Lines go somewhere, and are not comfortable located in empty space. (This observation does not apply to point-like streets, say Carnaby Street. Carnaby Street didn't really go somewhere as much as it was experienced in the sense of a large open-air market. And on many maps Carnaby Street appears as mere words floating freely. Id est, this line was really a point. Nor will it appear in this analysis in the guise of a line.) To sum up, lines seem to be less infected with randomness than points, and less liable to subjective interference than areas. Hence, lines would seem to be the anointed elements for this analysis. But—always a but—pragmatically, lines will be sharing the glory of anchordom with points, simply because we use what we've got, not what we want.

As reference to the content analysis showed, there were lines available for this analysis. In London, the Thames, Euston Road and Oxford Street were mentioned with admirable frequency, always by at least 50% of the mappers, and often by more than 75%. In Rome, the only line mentioned frequently was the Tiber, and yet lines could be constructed through the most frequently mentioned points. In Paris we had the Seine and the Boulevard Jourdan. What is suggested is that one line can be held constant, locking the maps into conformality in one dimension. A point (or points) frequently associated with this line will lock the maps into conformality in the remaining dimension. The study element can then be traced from the map onto a sheet of tracing paper. Gradually, the study elements from all pertinent maps will appear on this sheet of tracing paper. To concretize our hypothesis, we anticipate that a study element, say Oxford Street, will form a clot of lines on the first tracing. The streets will exhibit no consensus relative to the locked (or reference) line, say Euston. On the next set of maps, we anticipate that Oxford will be drawn with an enhanced degree of consensuality. On the succeeding set with an even greater degree of consensuality. Thus set 1 will show us Oxford , while set 2 will display , and set 3 look like .

What do we have in these tracings? A lot more than I at first realized. In the first place we can consider the bearing of Oxford, or any
other study line, to Euston, or any reference line. Second we can consider the varying lengths and forms of Oxford at a glance. True, we can say nothing about relative length, because of the uncontrolled scale, but, if the lengths become increasingly uniform, we begin to understand something about the issue of scale changes through time. (This also applies to the distance between reference and study lines.) Then, in regard specifically to the rivers, we can take in the intriguing question of variations in width and shape.

The technique is simple, effective and dramatic. It doesn't answer all the questions raised at the beginning of this chapter but it marks a step in the right direction, a step that is followed up in the next chapter.

II

Figures 16.0 through 16.3 show Oxford Street as it appears on the London maps. In the first case we find twenty different ideas about the bearing, shape, length and location of Oxford vis-a-vis Euston Road. As to bearing, these representations can be divided into three classes, those running essentially north-south, those running east-west and those at some oblique angle. Five of them are oblique, five tend north-south and ten run east-west. That is, only half the maps have shown Oxford in its true bearing vis-a-vis Euston. With regard to the issue of shape, 19 of the 20 maps agree that Oxford is straight, and the one curved example is not radically curved. With regard to length there is no agreement, which can be taken in one of three ways: either all the maps have been drawn to the same scale and Oxford is varying in length, or none of the maps have been drawn to the same scale and Oxford is the same length in all instances subject to scale correction or some combination of the foregoing two. Actually, it doesn't matter which of these explanations we accept, since we are looking for increasing consensuality which will include a tendency to draw the maps of London at similar scales. It would be simply noted that the variation in length is enormous and ranges from a quarter of an inch to nearly three. With respect to location we can make remarks about only a few of the maps. Those drawing Oxford to the north of Euston and to the east of our stabilizing point are substantially confused, as are those who show Oxford intersecting Euston or as an extension of Euston. These amount to half of the drawings. In conclusion; half the drawings show Oxford with the wrong bearing; half the drawings show Oxford ill-located with respect to Euston; there is extensive variation in length; there is consensus about the shape.

The situation with regard to the second set of maps is totally
Figure 16.0  Oxford Street, maps held constant on Euston Road and Cartwright Gardens, from first London maps.
Figure 16.1  Oxford Street, maps held constant on Euston Road and Cartwright Gardens, from second London maps.
Figure 16.2  Oxford Street, maps held constant on Euston Road and Cartwright Gardens, from third London maps.
Figure 16.3 Oxford Street, maps held constant on Euston Road and Cartwright Gardens, from fourth London maps.
different as can be seen at a glance. Of the twelve Oxfords shown, nine of them agree on the issue of bearing, making it east-west. There is total agreement with respect to the shape, all being straight lines. Furthermore, variation in length has also been reduced. Finally, only two of the drawings show a total lack of sensibility vis-a-vis location. Both are shown north of Euston and one of these is also shown east of the reference point. In conclusion: 75% of the drawings now show Oxford at the correct bearing; 83% of the drawings show Oxford correctly located with respect to the standard; there is decreased variation in length; there is total agreement on shape.

The third map confirms this trend. Of the thirteen drawings shown, ten agree on bearing and location. There is great consensus of shape and length, particularly among those showing correct bearing. Although the three miscreants stand out, there is actually an impressive amount of agreement on this third map, especially with respect to the length of Oxford, an area in which agreement has not been terribly strong up until now. This is the one real area of change between the second and third maps. There is another difference that has to do with north-south scale. On the second map Oxford lies on top of Oxford in great proximity, whereas on the third all the Oxfords have spread apart some. It would seem that on the second map in addition to other agreements that there was a strong consensus about the scale with which to represent the north-south dimension, at least in this portion of the map surface. While the greater variation in north-south scale that shows up on the third map is within limits, and is substantially less than on the first map, it is greater than that on the second map. But on the other hand, there seems to be greater east-west scale consistency of the third map than on the first or second. This would seem to suggest the possibility that scale was dealt with one dimension at a time in the sequence of map creation. We shall watch for this in the rivers which follow.

The final figure in the Oxford series shows only three representations of Oxford Street, all wildly disparate vis-a-vis bearing, shape, length and location. The one interesting thing about this is to see how this information showed up in the content analysis. Recall that Oxford Street there showed up as Oxford Street, correct in every respect. It is this sort of geographic harum-scarum that is totally obscured by content analysis.

Our conclusions from the Oxford series can be succinctly stated; consensuality (and in this case veridicality in the primitive sense) increases with respect to bearing, shape, length and location for the first three map sets; concomitantly, scale would seem to become
increasingly consensual generally, with stronger agreement in the north-south dimension on the second set, and in the east-west dimension on the third set.

Figure 16.4 through 16.7 show the same thing as we have seen for Oxford Street for the Thames. In addition to bearing, shape, length, and location, we shall consider the question of fatness. It will be noted in Figure 16.4 that four of the drawings show this last quality. These four kids violated the point-line-area method when it came to drawing the river. We have already discussed the difficulty of restraining oneself to a line when it comes to drawing something as "areal" as the Thames. Now we shall be able to see how this issue is dealt with by the kids through time. On their first attempt at drawing the Thames the kids were able to come to no agreement about the river except to note that it was south of Euston Road. Otherwise the river is shown with any wildness of shape, bearing, and a certain variation in length, though many of the maps show the river crossing its entire surface from east to west.

Figure 16.5 shows the kids' second attempt at drawing the Thames. I don't think I have to point out the great increase in consensuality with respect to bearing (commencing in the south-west, curving north, and wandering due east off the map), shape, length and location. Furthermore, most kids are drawing the river fat, five instead of four. Without question, these are drawings of the same river. Given the complexity of the Thames, this is no mean feat. It might be further noted that there is increased agreement on the distance between the Thames and Euston Road. This would bear out what we learned on Oxford Street about the increased consensuality of scale in the north-south dimension on the second map.

Figure 16.6 shows the third attempt. This is a simple reaffirmation of what we saw on the second set. There are still five fat rivers, but they now comprise half of the rivers drawn.

Turning to the last of the Thames collections, we see that if our final four mappers could come to no agreement about Oxford Street, they could agree about the location and length of the Thames but not about its shape and bearing, though the disparities shown are not enormous. There is remarkable stability in the north-south scale, especially if you remember what was happening to Oxford Street.

Our conclusions about the Thames series are repetitions of our conclusions about Oxford. There is increasing consensuality (and veridicality in the primitive sense) from the first attempt to the second,
Figure 16.4  The Thames River, maps held constant on Euston Road and Cartwright Gardens, from first London maps.
Figure 16.5  The Thames River, maps held constant on Euston Road and Cartwright Gardens, from second London maps.
Figure 16.6  The Thames River, maps held constant on Euston Road and Cartwright Gardens, from third London maps.
Figure 16.7  The Thames River, maps held constant on Euston Road and Cartwright Gardens, from fourth London maps.
and in this case the consensuality is retained through maps three and four. Likewise there is strong agreement in regard to the north-south dimension appearing on the second set. It might be noted that the north-south variation that appears on the third Oxford set is swallowed up by the consistency in the Thames set in this dimension on the third set. That is, the kids agree on the third set about the north-south scale for London as a whole (since the Thames is the south boundary of most of our maps while Euston Road is the north boundary) but that within this consensual scale for all of London there are local variations in the vicinity of Oxford Street (of elsewhere we are not in a position to speak). An additional remark must be made about river fatness; drawings of the fat river occupy an increasing large part of the drawings of the river altogether.

All of these conclusions are confirmed in Rome. Figures 16.8 through 16.10 show the Tiber and its transformations. The first attempt to draw the Tiber resulted in what can only be called a mare's nest. The Tiber is going in any and all directions, is drawn at any length, with any shape, and appears just about anywhere. With one exception, whenever the Tiber crosses the reference line or an extension of that line it means that our reference points appear on the wrong side of the Tiber with regard to the majority of map elements or with regard to an orientation system drawn on the map. That single exception is the case of a student who showed the westward trend of the river in its northern extremity. Notice as well the enormous number of fat rivers. This is especially noteworthy since the Tiber is a narrow stream compared with the Thames. But this time, the compelling desire to draw rivers fat has seized a large number of our students. To characterize this compage as a mare's nest says it all.

In comparison the second attempt at the Tiber is order and consensus personified. Most of the rivers are now heading north and south. Whereas twelve rivers crossed the reference line on the first attempt, only five do so now. Whereas eight rivers ran in a predominantly east-west direction on the first attempt, only one really does so now. There is a marked increase in consensuality. Note that in London on this second attempt we noted an increase in agreement about the north-south scale to be used in drawing the map. We can't speak to this issue here except to note that there is certainly no consensus about east-west scale on this map.

The third attempt is not only more consensual in all respects, but shows an increased agreement about the nature of east-west scale. This agreement in east-west scale on the third map was noted in regard to Oxford Street in London.
Figure 16.8 The Tiber River, maps held constant on a line drawn between two of: Trevi Fountain, Spanish Steps, Piazza Venezia, Vittorio Emanuele Monument; from first Rome maps.
Figure 16.9  The Tiber River, maps held constant on a line drawn between two of: Trevi Fountain, Spanish Steps, Piazza Venezia, Vittorio Emanuele Monument; from second Rome maps.
Figure 16.10  The Tiber River, maps held constant on a line drawn between two of: Trevi Fountain, Spanish Steps, Piazza Venezia, Vittorio Emanuele Monument; from third Rome maps.
In conclusion with respect to the Tiber series we note that representations of the river are generally fatter than those of the Thames in spite of the fact that the Tiber is narrower than the Thames; we note an increase in consensuality with respect to bearing on all three maps; we note an increase in consensuality with respect to location from first to second (fewer cross the reference line) but especially from second to third (still fewer cross the reference line and most are in the center of the paper); we note an increase in agreement, not with respect to actual length, but with respect to the amount of paper scribbled; we note increased agreement with respect to east-west scale on the third map; we note increased consensuality with respect to shape, but this needs explication.

There is no agreement as to the shape of the Tiber. There is no idea in the minds of the kids in Group L as to the shape of the Tiber even on an individual basis, with the sole exception of Bob Watson, who had, of course previously spent time in Rome. But this lack of knowledge can take several forms. Absolute ignorance would result in as many straight representations as wildly curved and this is exactly where it becomes possible to speak of increasing agreement about the shape of the Tiber through time. On the first attempt there were in fact several straight rivers, and a number which resembled the Thames in number and character of bends. On the second attempt the number of straight and Thames-like rivers has decreased, and they have further decreased on the third attempt. That is, there is growing agreement about the Tiber as a river with a large number of wild curves.

This perception of the Tiber has consequences. How do you draw a river that is composed of a series of wild and uncognizable curves? Figure 16.11 shows Vittoria Palazzo's second attempt at drawing the Tiber. But can't we see what she's done? She's taken her pencil and waved it down the page. This says the wildness of the river is beyond her comprehension and that she is simply capable of indicating—not the shape—but the fact of its incomprehensibility. Further, the drawing of the Tiber becomes a sensual delight. Try tracing Vittoria's river. Feel the wonderful ease and freedom and flexibility of that movement? She put her pencil down and let go. Of everything.

Figure 16.12 shows Miss Bloch's third attempt to draw the Tiber. Though you can't see them in the reproduction, her river consists of three connected fragments. The first fragment consists of the top three curves. Then she has lifted her pencil and drawn that magnificent sweep toward the "teatro Marcellus. Finally she has done a Vittoria Palazzo down to the Mediterranean. If you try to trace this river, you will find it a delight as well. The insanity of the Tiber has been the occasion for unleashing those drawing tendencies that the
Figure 16.11  Second Rome map: Vittoria Palazzo
Figure 16.12  Third Rome map: Germaine Bloch
point-line-area method was designed to inhibit, that free and easy
destruction of any hope of drawing a decent map. Fortunately the Tiber's
insanity causes little necessary displacement of most features, as long
as it runs north-south and is placed in the center of the paper. But,
see what I mean about shape. The agreement that comes with experience
in Rome is that the Tiber is beyond taming.

The more restrained approach to the Tiber is shown in
Figure 16.13, Marina Giaconda's third map. It is a nice map that I
would like to dwell on, but we're here on riverine business. Marina has
not let it all hang out with respect to the Tiber. In the first place she
shows us less of the river than do the others. For her, Rome is to the
east of the river to begin with, and its northern and southern extensions
are of little interest to her. But within these confines she has drawn a
sensuous river as well. It took no tongue-biting concentration to draw
that river. Its two banks were swept out in single smooth strokes. Try
tracing them. You'll succeed most readily if you approach the task with
a loose wrist and relaxed fist.

The differences between the Tiber and the Thames are easy
to summarize. The Thames had vast, slow, cognizable shifts in
orientation that were vital to the arrangement of the rest of the city. The
Thames was a relaxed, areal giant. Not so the Tiber. It scurries back
and forth across the landscape in a hurried, frenetic manner but without
wandering too far in any of its wanderings from a straight line that could
be drawn through it. And these differences were readily communicated
to the kids who displayed them on their maps, in London by trying to get
the exact shape down pat, in Rome by merely suggesting what was going
on. This difference between the Tiber and the Thames drives home and
underscores the fact that these maps are the results of interactions
between the kids and the world; neither the world, nor the kids, but both.

*   *   *

The case is made best in Paris. Here is a river that plays
an absolutely vital role in any map of the city. Here is a river that makes
one huge easy curve through the heart of the city. Figures 16.14
through 16.17 display the drawings of the Seine. In the first case we see
that the river is fairly well represented right off the bat. Most of the
time the Seine is heading in the right directions, basically east-west,
though with terminal curves to the south. These curves are not well
understood at this point. But this is only generally true. There are two
cases of the river drawn totally out of whack, and many instances of
gratuitous curves where none exist. There is little consensus about its
location except that all the drawings are north of the reference line.
Figure 16.13 Third Rome map by Marina Giaconda
And most of the rivers are fat now.

The second set of drawings shows incredible consensus. With a single exception, the rivers are the same shape, in the same place. We have never seen such agreement up 'til now. And all the rivers are now fat. This amazing consensus continues to be displayed through maps three and four. As opposed to the Tiber, this is a tame river, crucial to know, and easy to know. And so we see consensus. The drawings speak for themselves. I have nothing to add.

The conclusions reached from this analysis are easy to formulate and would seem fairly definitive. Environmental knowledge increases with experience for any individual. For a group this increase in knowledge shows up in growing agreement about what has been experienced and this agreement grows along a variety of dimensions: bearing, shape, length, location and mode of representation. Thus in each city we have seen the rivers drawn chaotically on the first attempt in all respects. On the second attempt we have seen growing agreement about bearing, shape, and location and have noticed stabilization of the north-south scale. On the third attempt we have seen still greater agreement with respect to bearing, shape and location, and have seen growing agreement in regard to the east-west scale dimension. The issue of length has been somewhat difficult to assess for the rivers, but length became increasing consensual for Oxford Street from the first to the third maps. The fat representation of rivers has increased from a mere handful of kids on the first London map to all of them on the second Paris map. A subsidiary conclusion is that rivers are more properly described as areas than as lines, particularly in the absence of the utilization of the river in its functional character (i.e., the kids in Group L did not use the rivers for travel in the cities).

What this all adds up to is that map creation proceeds along well-defined genetic lines with regard to our map typologies developed in Chapter 2. First maps, no matter the strategy employed, will tend to be more personal than third maps. Mappers move from being creators of individual mental maps to being creators of consensual mental maps. Given time and inclination they move to being creators of standard mental maps. The sequence was also shown to be true with regard to content, the third map always showing greater consensuality in this respect than the first. Thus both content and form become increasing consensual through time. But in the content analysis this development was shown to be related closely to the use and cognition of point, line and area phenomena. Combining the results of the two analytic techniques leads to the following conclusions:
Figure 16.14 The Seine River, maps held constant on the Boulevard Jourdan and the Cite Universitaire, from the first Paris maps.
Figure 16.15  The Seine River, maps held constant on the Boulevard Jourdan and the Cite Universitaire, from the second Paris maps.
Figure 16.16  The Seine River, maps held constant on the Boulevard Jourdan and the Cite Universitaire, from the third Paris maps.
Figure 16.17 The Seine River, maps held constant on the Boulevard Jourdan and the Cite Universitaire, from the fourth Paris maps.
1) Personal mental maps, genetically the first type to appear, are characterized by low consensuality in content and are pointilistic in nature. There would seem to be a connection between point consciousness and the most personal of mental maps. This could be stated: personal mental maps are point oriented; or conversely, point oriented maps are most likely to be only personally useful.

2) Consensual mental maps, genetically the second type to appear, are characterized by higher consensuality in content and are more linear in nature. There would seem to be a connection between consensual images and linear orientation. This could be stated: consensual mental maps are line oriented; or conversely, line oriented maps are likely to be more widely useful than point oriented maps.

3) Standard mental maps, genetically the last type to appear, are characterized by nearly total consensuality in content, and show areas better than the two preceding types. There would seem to be some connection between the standard mental map and areal orientation. This could be restated: standard mental maps are areally oriented; or conversely, areally oriented maps are likely to be the most widely useful of all mental maps.
Imagine the following physical equipment: a blackboard on which is drawn a representation of the earth's surface, a portable bulletin board with the opaque cork board replaced by a plate of glass and this contraption placed about twenty feet in front and parallel to the blackboard. In addition, imagine a large number of strings, each string having one end glued to the blackboard and the other end glued to the plate of glass so that it is not difficult to imagine that each point on the blackboard map has a string connecting it to each point on the glass. The strings establish a one-to-one correspondence between the blackboard and the glass. The particular relationships of the set of points at the blackboard end of the strings to the set of points at the glass end of the strings determines the transformation or, the geometric rules under which we are constrained to move from one surface to another. There are severe restraints on what sort of rules of translation can be adopted. For instance, we could have the strings cross each other in a chaotic entanglement producing a random transformation. This would create a situation in which every spatial property on the blackboard is destroyed by the transformation to the glass. This is not a promising spatial prospect...

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Theoretical Geography
As must be clear, despite the success of the analysis performed in the last chapter, it barely scratches the surface of the map. That is, we were able to discuss three rivers and one street using that technique. Needless to say, this will not do. A map is much more than any element, no matter how central or prominent that element is. Furthermore, the space of the map may conform to certain characteristics around a given feature and yet conform to an entirely different set of characteristics elsewhere on the map surface. The deformations of the rest of the map surface may or may not follow from the deformation of a given feature. Is there any way to get an idea of the character of the map surface as a whole, without grappling with the question of scale?

Indeed there is just such a technique available. To my knowledge the technique was first applied to mental maps in a report on a project utilizing sketch maps of the campus of Clark University to investigate the impact of a move on the part of the faculty from one set of offices to another (Beck, Cohen, Craik, Dwyer, McCleary, and Wapner, in press). In theory the technique is quite simple, although its assumptions demand investigation, but in practice the technique is somewhat demanding. However, its use in the study mentioned above provided amazing and fruitful results and consequently it has been employed, probably more fruitfully, in the study at hand.

Reference to Figure 17.0 will facilitate discussion of the technique. Here is the comparison of the sketch maps with a standard map. Whether or not the standard is a veridical representation of the real world is irrelevant. No matter what it represents, it provides a standard against which to compare all of our sketch maps. The standard maps used in this case were recent large scale maps of London, Rome and Paris. These were reduced in size to six by nine inches and a rectangular grid was laid arbitrarily upon them. It is important at this point to understand the characteristics of this grid: 1) all lines crossed each other at right angles; 2) all line segments were of equal length in either direction; 3) each compartment was a perfect square containing an area of one square inch; 4) all vertical lines were parallel and all horizontal lines were parallel. The grid may be seen in reduced form in Figure 17.0.

This grid bears an arbitrary but precise relation to the city over which it is imposed, similar to the relationship between the world and the somewhat arbitrary grid of latitude and longitude lines imposed upon it. As a result of this imposition, each point, line or area in the city may be assigned a specific set of coordinates which define it uniquely.
Thus, the back entrance of the Ecole Militaire in Paris bears the coordinates H3.5, V2.5 and no other point in Paris bears these coordinates.

Now, if the relations that obtain between the things mapped by the kids are isomorphic to the relations that obtain on the standard map it will be possible to produce an identical grid on a sketch map. To the degree that the relations between the things mapped by the kids differ from the same relations on the standard map, the grid will be deformed. Vertical and horizontal lines will not cross at right angles, compartments will not form squares, line segments will be of varying lengths, and so on. In Figure 17.0, the points in the lower row represent the same points shown in the upper, or standard situation. Those in the lower are representative of the relative locations of the points that obtain on a hypothetical sketch map. Connecting the points in the standard situation results in a right-angle grid, while connecting those in the sketch situation results in a grid that differs markedly from the right-angle example. The difference between the grids may be measured using a variety of devices.

The process of drawing the grid on the sketch map is worth describing, both for a better understanding of the grids that are to be displayed, and for the benefit of anyone wishing to repeat the process. However, certain assumptions must be made about the nature of the map surface before it is possible to proceed. These assumptions derive from the discussion of the nature of the map surface in Chapter 13. There it was shown that the map surface is no more inherently "spatial" than it is "temporal," that is, to the extent that the map is a trace of a space-time event, it displays spacio-temporal relations, as opposed to either "spatial" or "temporal" relations alone. This realization allows us to see the map as isomorphic to the experiences inherent in gathering information to be mapped, and makes it impossible to view the map as merely the display of "spatial relations," whatever those may be. Further, our argument will draw heavily on our ability to reduce the triadic spatial relation "between" into a pair of spacio-temporal dyadic relations, as discussed in Chapter 13.

The Assumption of Spatial Continuity. It is a common assumption that space is continuous in nature, that is, that space does not consist of discrete "hunks" but rather that is a continuum, as it were, from one part of space to the next. However, the General Theory of Relativity and certain recent discoveries in quantum mechanics tend to cast some doubt on the general validity of this assumption, suggesting that the nature of experience (and of space and time) may be discontinuous, that a certain state may exist for a time, and then be replaced by a
Figure 17.0  The relationship between the standard right angle grid and the grid of a hypothetical sketch map.
finitely different state. Considering these issues Russell says that "continuity of motion, which had always been assumed, appears to have been a mere prejudice" (Russell, 1964, 833). If this is the case, our customs of interpolation and extrapolation lack theoretical validity, and must be disallowed, or at any rate seen as practices founded on purely assumptive grounds. On the other hand, the success of the General Theory of Relativity in these areas is not complete (see Adolf Grunbaum in Smart, 1964, 313, for a summary of the failures of the General Theory) and even Russell is constrained to remark that "the philosophy appropriate to quantum theory has not been adequately developed" (Russell, 1964, 833). This being the case I suggest that we continue to employ tools such as interpolation that are based on the assumption of spatial continuity in general.

If there are questions about the continuous nature of experience generally, there are many more questions that could be raised about the nature of mental space and sketch map space in particular. For example, the mental space of dreams does not seem to be continuous, but rather discrete, and in fact it is partially the discrete character of dream space that allows us—demands us—to call it dream space. However, sketch maps are not dream space, and since the question of the relationship between the discontinuous nature of dream space and other mental space will be here begged, we are going to assume that the space represented on the sketch maps is in fact continuous in nature. We shall assume—whatever the shape of sketch map space—that it flows continuously across the surface of the map without finite breaks. Thus we may interpolate and extrapolate in sketch map space.

The Assumption of Navigational Sufficiency. Where our first assumption established the continuous nature of sketch map space, this assumption will establish the nature of the shape of sketch map space and allow us to designate an appropriate geometry for the examination of this space. Essentially this assumption says that sketch map space is a sufficient representation of the environment in question to allow the sketcher to navigate in said environment. To rephrase this assumption, it means that the grid produced by the sketch map obeys the following laws: first, lines parallel on the standard grid remain parallel on the sketch map grid; second, if grid line 2 appears between grid line 1 and 3 on the standard map, it so appears on the sketch map.

Let us consider the implications of this assumption. A person setting out to walk through Paris along an arbitrarily designated line might first encounter the Boulevard Jourdan, the Parc Montsouris, and the Boulevard General Leclerc, then pass to the west of the Jardins de Luxembourg, cross the Seine, pass between the Tuilleries and the
Louvre and so on. We shall consider each of these encounters as a point and note that they can be arranged in a linear sequence such that the second encounter comes between the first and the third, and that the third comes between the second and the fourth and so on. (Basically we are disintegrating the spatial sequence into a series of dyadic pairs as set forth in Chapter 13.) Each of these points can be numbered as follows:

\[1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8\]

This sequence as drawn has spatial relations to be sure, but also has the temporal or causal sequence in which they were encountered on the arbitrary walk described above.

Now consider the location of these points as found on a hypothetical but typical sketch map.

All that our assumption of navigational sufficiency says is that a kid drawing this map is nonetheless able to walk the route described above even though the points are not ostensibly arranged on the sketch map as they are on the standard map. On the standard map the walk from the Boulevard Jourdan to the Louvre appears as a simple straight line. The standard map was made according to a standard projection. Is it necessary that the student use the same projection? No. All that is necessary is that he be able to complete the walk using his projection. That is, we must encounter point 2 between point 1 and 3 in the sketch map as on the standard map. Can this be done with the sketch points? Certainly:
Our simple, though not straight line, solution is only one of many potential solutions for this particular set of points. What is important is that in both the sketch set and the standard set, the nature of the spacio-temporal experience is similar. Both sets are sufficient for the navigation of the Parisian environment. Neither the standard set nor the sketch set are real. Both are representations on a two dimensional surface of an infinitely more complex multidimensional situation. The standard straight line may appear more elegant, or it may not, but it is no more real.

Now consider three parallel walks on the standard map. They could be represented in the following manner:

```
1 --> 2 --> 3 --> 4 --> 5
A --- B --- C --- D --- E
a --> b --> c --> d --> e
```

The same set of points might appear on the sketch map as follows:

```
4 --> 5
3 --> b --> B --> a
2 --> a --> A --> 1
E --> 3 --> c --> d
D --> e
```

This set of points unquestionably looks chaotic when compared with the order of the standard set. The assumption of navigational sufficiency allows us to connect the points in the following manner:
While this arrangement may not appear as elegant as the standard arrangement, both arrangements are equally sufficient, and that is what is important. (It might be objected at this point, where I have employed our law concerning parallels, that the three lines sketched above are not in fact parallel. Quite the contrary is true, for the Euclidean axiom of parallels simply states that there is exactly one parallel (that is, a line which has no point in common with the first line and such that both lines are contained in a plane) to a line through a point not on the line, and it is in exactly this sense that the lines sketched above are parallel and in this sense only.

Obviously it would be possible, in the standard case, to connect point 1 with point A with point a, and so on; with points 2, B and b; 3, C and c; and so on, until we found ourselves with the completed standard grid. The same can be done with the sketch grid which would finally look like this:
I have omitted the arrows for the walks this time since it is obviously possible to make the walks in either direction (theoretically). Nor will I bother to draw the diagonals that could be drawn et cetera. The two sets of points—standard and sketch—are topologically isomorphic and that is sufficient to navigate by. At this point I wish to discuss the manner in which our assumption of spatial continuity comes into play.

Suppose for a moment that in the preceding illustration only points labeled 1, 2, 3, 4, 5, and those labeled a, b, c, d, e, existed. That is, suppose that the sketcher had omitted all those points labeled A, B, C, D, E. Were this the case I would have proceeded exactly as I have for the points displayed, with this exception; I would have been justified in interpolating the existence and position of the missing line. Its existence is a function of the continuous nature of the space in question, and its position would be interpolated to correspond to the position of the same line on the standard map—midway between the numbered line and the lower case line.

In the end our assumption of navigational sufficiency amounts to no more than assuming that the kids sketching the maps are capable of navigating through the environments of London, Rome and Paris with the information displayed on their maps. It is likely that our failure to understand this in the past resulted from our unwillingness to consider the possibility that the sketch mapper was not distorting the world in his map but rather projecting it according to a personally consistent and useful system. There is, of course, no reason that he should use any of the multitude of mathematical projections that have been devised by professional cartographers. There is nothing to have prevented him from representing his environment using any convenient system, no matter how strange such a projection might appear to our Mercator-Albers-Miller-Lambert jaundiced eyes. All that is necessary for any map is that it be useful to an individual, to a group, to any number of people, and by useful I do not now mean to imply that it be even navitationally useful, so long as it fulfills some felt need.

To understand the role these assumptions play in performing our grid transformation analysis, it is only necessary to describe the process of locating the grid on any sketch map. You take a sketch map and assign to each item on the map the coordinates that that item would have on the standard map. Thus, the Eiffel Tower on the standard map is located at H3, V2, so we assign H3, V2 to the Eiffel Tower that appears on the sketch map. We do this with each and every item on the sketch map. When all the coordinates have been transferred to the sketch map, we regard them as control points and begin to draw our grid system, treating the grid lines as isarithms (see Figure 17.0).
It may be objected that isarithm is not the appropriate word but I rather feel it is. An isarithm is a line connecting points of equal value. The value that all the points along one of our grid lines have in common is that of equidistance from the edge of the standard map. Thus, all the points along grid line V3 are exactly equidistant from the edge of the standard map. Furthermore, the use of the term isarithm assumes that higher and lower values cannot be found next to each other without the incidence of intermediate values. Thus, although on a given sketch map we find a point located on grid line 2 immediately adjacent to a point located on grid line 5, we assume that passing between these two points are grid lines 3 and 4.

The treatment of the grid lines as isarithms results directly from our assumptions of surficial continuity and navigational sufficiency. Actually, our grid lines become analogous to contour lines, as a glance at the following sketches will make apparent. To the extent that the grid lines are analogous to contour lines, so the grid transformations that comprise the results of this analysis are analogous to topographic maps. Has this analogy any value?

It could have great value. The study of topography has developed an interesting and extensive vocabulary that we may borrow from freely and apply to the study of mental map surfaces. It is particularly relevant in a study such as this, which by virtue of collecting maps through time, is able to take a genetic viewpoint. The basic mental map-geomorphic analogy is quite rich. Thus novel experiences may be compared with the tectonic activity of the earth's crust, the effects of memory compared with the process of erosion, and many geomorphic features compared with many features of the mental map surface. Consider the analogy of the grid line described a couple of paragraphs back. Several proximate grid lines, the result of two environmentally distant items being placed next to one another, can be understood to represent a steep slope or cliff. Consideration of these grid lines as a perceptual or cognitive cliff gives us a handle on this phenomenon. It might be designated a p-cliff (for perceptual-cliff) and its existence would imply the same sorts of things about the mental map that the existence of a real cliff implies about the nature of topography.

Further examples of analogies are legion:

In terms of the grand scale of geological processes there are two fundamental classes of landforms. First, there are the original crustal masses raised by the internal earth forces and by volcanic eruption. They comprise the initial landforms.
Second, there are the landforms made by agents of denudation. Because these follow the initial forms and occur in orderly sequences, they are called collectively the sequential landforms. (Strahler, 1965, 228)

In terms of our study the initial p-landforms are the mental maps whose traces we have been considering. Volcanic eruption is not too violent a term to compare with the effects of a summer tour to Europe on the mental map of an individual. The sequential p-landforms, components of mental maps that develop under the impact of time once the trip has ended, gradually denude the initial p-landforms. And as is true in the geologic case, certain portions of the initial p-landforms will prove to be more resistant to p-erosion than others, leaving sharply etched remnants on an increasingly smoothed surface. By studying these "memorials" in a geologic fashion, it might be possible to reconstruct the initial p-landforms, even in the absence of specific information about the nature of the surface.

Any landscape is really nothing more than the existing stage in a great struggle or contest. The internal earth forces spasmodically elevate parts of the crust to create initial landforms. The external agents patiently keep wearing these masses down and carving them into vast numbers of smaller sequential landforms. (Strahler, 1965, 228)

Strahler's words apply equally well to the mental landscape. This is one way in which the grid transformation analysis enriches our ability to discuss the characteristics of the mental map surface.

There is, of course, a second, even more obvious analogy that can be drawn between the grid lines and the lines of latitude and longitude. This analogy has been implied through much of the preceding discussion. Thus it is that we become able to discuss with cartographic precision the varieties of projections employed by the kids in drawing their sketch maps of London, Paris and Rome, and by extension to some awareness of the probable projections employed by the mind in storing locational information. Waldo Tobler has provided the rationale for our approach in his attempt to determine map projections employed by map makers of six and seven hundred years ago (Tobler, 1966). In this study he used a technique practically identical to ours, assigning contemporary coordinates to items portrayed on these ancient maps, drawing the grid employing these coordinates, and subsequently trying to
identify the nature of the projection used in drawing the map in the first place.

The following comments refer only to the estimation of the map projection implied by the ancient mappaemundi and portalan charts. The maps ...under investigation do not contain any indication of the terrestrial graticule of latitude and longitude. This has led some students to conclude that the maps are not based on any projection...Certainly the lack of graticule does not imply the absence of a projection...It would be correct to say that the map is not based on a map projection only in the sense that the cartographer involved was not consciously employing a map projection. But, as one learns from any elementary work on map making, every map requires a map projection. The ancient maps therefore are implicitly referred to some map projection... The fact that the implied projection does not match either of two specified contemporary projections does not prove that the chart is not based on a map projection; such a conclusion can never be drawn if one accepts the notion of an implied map projection. The search must continue for a map projection, which may be any one of the several hundred now known, or may be one which is completely unknown today...An obvious approach is to attempt to sketch the lines of latitude and longitude on the map, as estimated by identification of locations shown thereon. Examination of the graticule, its curvature and so on, should provide hints as to a reasonable family of projections. (Tobler, 1966, passim)

At this point Tobler's interests and our diverge since he becomes concerned with estimations of increasing accuracy throughout the history of cartography. Of course, we are not using the earth graticule as a basis of comparison, but rather an arbitrary grid analogous to the earth graticule. Nor am I concerned with establishing the type of projection used by an individual mapper, but rather with the varieties employed and the growth of projective consensuality through time.

In an earlier article Tobler wrote:
The desire for a classification of map projections stems from the fact that an infinite number of distinct projections are possible. Hence, the fundamental problem in classifying map projections is the partitioning of this infinite set into a comprehensible and useful finite number of all-inclusive and preferably non-overlapping classes. (Tobler, 1962, 167)

The classification devised by Tobler resulted in four basic classes of projections. I will not delve into the reasoning behind his classification but simply adapt some of its salient features to my purposes. The fourth class was considered by Tobler to be the simplest. As a glance at the results farther on in this chapter will show, it is also the least common in the mental map situation. Class four is characterized by perfectly straight lines in the rectangular situation: \(\frac{1}{4}\). Tobler's third class relaxes the criterion of straightness in the meridians, while retaining it in the parallels: \(\frac{1}{4}\). For class two Tobler reversed the criterion of class three producing a grid like this: \(\frac{1}{4}\). In class one, both the parallels and meridians are curved: \(\frac{1}{4}\). (All the other categories are actually special cases of this class, the most general.)

There are other systems for analyzing map projections into categories of varying systematic quality and character. Robinson, for example, has provided ten criteria that can be used to classify maps based on deformational properties (Robinson and Sale, 1969, 221-244). He also discusses a classification based on constructional properties (Robinson and Sale, 219-220). All three of these classifications (Tobler's grid morphological, and Robinson's deformational and constructional property approaches) are insufficiently general for our purposes, in that all are concerned with the geometry of projecting a sphere onto a plane, an issue that may or may not be relevant in the mental mapping case. Inasmuch as Tobler's deals with the characteristics of the apparent grid (and grids are what we have) and inasmuch as his results in the smallest number of classes, it is Tobler's system to which we shall allude. Nonetheless, Robinson's classifications have some merit and could be employed with value.

At this point we are ready to examine the results of the grid transformation analysis. Bear in mind, however, what we have covered in this introductory note; we have made two assumptions about the sketch maps, and have discussed two sets of language with which to deal with our results. The two assumptions are those of surficial continuity and navigational sufficiency. The two languages are those of geomorphology
II

Figure 17.1 (A, B, C and D) is from any point of view a rather remarkable figure. Casting my eye over the incredible range of variations worked on a simple right angle grid I am reminded of the Bunge quote opening this chapter: it's a bleak spatial prospect. Of the twenty-six transformations displayed nearly all fall rather neatly into Tobler’s most general class of projections, while the application of Robinson’s simplest criteria must look like a bit of a pipe dream. Nonetheless, some categorization is immediately apparent and I shall divide the projections into four classes based on the degree to which they approximate Tobler’s most general and most specific class. Thus those maps that nearly approximate a projection consisting of a straight line grid have been separated from those showing only local variations in such a grid, those showing excessive variation from such a grid, and from those showing distinctly non-straight line grids in both dimensions. Basically I have two classes: straight line grids and non-straight line grids, with two intermediate classes. Since the existance or non-existance of these classes must be determined by whether members of each class bear greater resemblance to other class members than they do to members of other classes, it will be necessary to place each grid transformation in its class and to compare it to other members of that class and to maps in other classes.

The first class to be considered contains all those maps entirely lacking straight line grids. For the first London maps this class includes the projections of: Pagan, Gray, Cruz, Gordon, Lincoln, Fisher, Baker, Heller and Casyk. Each of these projections is characterized by significant curvature of substantial portions of the space of London relative to the reference (or right-angle) grid system. Let’s look at a couple of these in detail to see what this implies. Take the projection used by Nybia Pagan (north is to the right on her map). At first sight her map, from which this projection was inferred, appeared to be less than reasonable. Basically it consisted of two separate constellations of points and lines. One of these constellations centered on Euston Road with the other on the Thames. (Refer to Chapter 7.) The Thames was south of Euston Road and consequently overall the map was veridically oriented. The problem was that all the points connected with Euston Road that belonged south of Euston Road were located north of it, or in other words, points that belonged (on the reference map) between Euston and the Thames were found to be not so located. It would seem that Nybia believed that walking down Tottenham Court Road from Euston led her north towards Scotland, instead of south towards the Thames.
Figure 17.1A Transformations of the first London maps.
Figure 17.1B Transformations of the first London maps.
Figure 17.1C  Transformations of the first London maps.
Figure 17.1D. Transformations of the first London maps.
Now let us reconsider the assumption of navigational sufficiency. If Nybia had actually believed that London were organized as shown on her map she would have been unable to move, or would have been constantly getting lost. Thus to reach the Thames constellation she would have had to proceed down Tottenham Court or some parallel road. But on her map these lead north away from the Thames. It is an impossible situation. It is also easy to resolve. Note that the gorgeous curves in her projection do a very simple thing. In effect they flip the entire Euston constellation. If she walks down Tottenham Court Road now, she will head initially north and then curve west and finally south before she ties up with the Thames constellation. In effect, her map is confused in respect to space that is not curved, but not confused in respect to curved space (curved only in the sense that her grid lines are not straight). Is there any reason not to project Nybia's map as we have done? None. Are there any reasons for so doing? Yes. They make the map align with the behavioral outputs, that Nybia did not get lost and that Nybia went from Euston to the Thames with some frequency.

A projection exhibiting generic similarities is that of Susan Lincoln. Viewed as a projection in uncurved space, Susan would be unable to move or Susan would be getting lost with regularity (she did get lost once). A projection in curved space resolves these difficulties. The projection shown for Erica Cruz presents a combination of Nybia's and Susan's methods. Thus, Erica shows Tottenham Court Road heading north from Euston with respect to the Thames and consequently her projection shows the great Pagan curves. However, the minor disturbances that transform Susan's grid also show up on Erica's map. If we now remember the strategy Erica employed in drawing her map we can explain some of the variation. On this first map Erica drew everything she had heard of in London, whether or not she knew its location. This explains the Lincoln variations, but since the Pagan curves remain through subsequent Cruz attempts, we must consider them organic attributes of her projective system.

Our second class of mappers includes Jones, Monroe, Palazzo and Jaeckel and George Aiken. In these projections there is extensive curvature of space and yet the curvature does not affect the entire map surface. In our first category the whole projection shows such transformation. A perfect example of this is in the projection used by Agatha Jones. In her case half of the space of London is projected on a straight line grid with local disturbances, while the other half shows extensive curvature which results from the location of the Tower of London in close proximity to something like Parliament. Since this is a common cause of transformations it demands comment. It shows up in this class on the projections of Aiken, Jackel and Palazzo, though in her
case the result has not been the cramming together of lines in between Parliament and Westminster Abbey (Vittoria's map has north at the bottom). In most cases, however, the movement of the Tower vis-a-vis Parliament results in a distinct p-cliff. This p-cliff may be viewed as a steep escarpment up which perceptual movement is arduous. Thus we can skim across the p-plain of London west of Parliament (resulting in even separation of grid lines) but we bang into a perceptual barrier in trying to visualize London east of this point. London east of Parliament (and north of the Thames at this point) can be seen as a p-plateau introduced by a p-escarpment. In the case of Jaeckel, the p-escarpment has been worn away to a mere p-resistant finger, apparently impervious at this point to the effects of experience.

Our third class of mapper contains projections that begin to approach a straight line right-angle grid. Included here are: Montaigne, Giaconda, Lenz, Mayo, Eber, Bloch, Portman, and Nash. Some of them may seem only slightly removed from the last class, and yet in each instance the case can be made for the purely local character of the disturbance. Thus in the significantly curved example of Therese Montaigne, a single point is at work, which does not cause the grid angles to be other than 90°, nor seriously disturb the parallelism of the lines. It is not a straight line, right-angle grid, but in comparison to those we have seen it is a quantum leap forward. Similar remarks might be made about the projection used by Giaconda, but these would apply to none of the other members of this class. To a map, they give an overall impression of having been projected onto a straight line right-angle grid within which occur minor aberrations. Take the projection used by Bloch. In the center of the projection is a wild curve. That it is not shown in both sets of grid lines, means that it is incorrectly located vis-a-vis the standard grid in only one dimension. In fact, the line draws Piccadilly Circus south of Oxford Road where it belongs. That other parallel lines do not follow the leader in the chase for Piccadilly results from the fact that they are securely anchored on other business more properly theirs. Essentially, Miss Bloch has produced a replica of the standard grid with the sole exception of an aberrant Piccadilly Circus. The p-cliff on Mayo's projection results from the location too far to the south of a pair of places. An attached note says of them: "I don't know where they go—but they go together."

Finally we look at the class containing serious approximations of the reference grid. For our purposes these are straight-line right-angle grids. Let's not forget that these maps were the first ones drawn of London and that they were drawn free-hand. The grids in question are those produced by Abrams, Watson, Bill Brown, Pierce and Wood. As the general paucity of grid lines on these projections compared with
previous classes will make clear, the right-angle grid was achieved by
mapping a smaller part of London than was attempted by the rest of the
kids, a part that was well known and clearly understood. The two
exceptions are the projections produced by Watson and myself, and in
Watson's case there is a distinct tendency toward a p-cliff in the vicinity
of the Tower and in my case there is a notable expansion of space in the
upper center of the map, around the dorms and along Oxford Street.

The intriguing aspect of the grid transformations is the
amount of information they shed in both directions in the kid-city
interface. In previous analyses we have seen, that although information
was gleaned in respect to both environment and mapper, it was heavily
slanted in either one direction or the other. This analysis goes both
ways with amazing facility. This is clear in our conclusions regarding
the first set of transformations. On the one hand we have set the stage
for an examination of the development of projective systems on the part
of the kids. On the other we have seen which aspects of the environment
cause the greatest disturbance for the kids regardless of projection.
Thirteen of the projections show deviance from the reference grid solely
as a result of lack of clarity about the relationship between the Tower of
London and a nexus of places in the vicinity of Whitehall. In twelve of
the thirteen cases, this confusion has resulted in a p-cliff just to the east
of Whitehall. The number of kids involved becomes even more impressive
when it is noted that of the twenty-six maps displayed, ten of them didn't
even show the Tower. Thus, twelve of the sixteen maps showing the
Tower have moved it west, as well as south. How can this be explained?

One explanation has to do with the sightseeing tour that
introduced the kids to the Tower. The morning portion of that tour was
a connected exploration of London west of and including Whitehall. No
incursion into the City was made at this time. Following lunch in the
vicinity of the dorms, a long trip was taken (without commentary from the
native guide) to the Tower, ending with the bus popping into a garage.
Disembarking from the bus and leaving the garage the kids saw the Tower
and the Thames. But, their previous experience of the Thames indicated
that it was far to the south of the dorms, and the trip to the Tower
provided no contradiction of this belief. As a result, the Tower was
pushed farther south than would have been the case had the morning and
afternoon segments of the trip been tied together. This, of course, has
implications for the organization of sightseeing tours. They must be
arranged such that it is possible to connect all portions of the tour into
a whole. Our trip failed to do this. The return from the Tower took us
rapidly past a variety of unimpressive landmarks, including pubs and
office buildings on the Strand and Fleet Street. Then we arrived at
Westminster Abbey. Sequential major landmarks were the Tower and the

Figure 17.2A Transformations of the second London maps.
Figure 17.2B  Transformations of the second London maps.
Figure 17.2C  Transformations of the second London maps.
Abbey. But from the morning's tour we knew that the Abbey was adjacent to Parliament. Hence the three landmarks constituted a nexus of points together. Inevitably.

But what is the environment? It is not some God-given thing, but rather an event that is unfolded through time. Thus the environment of London as experienced contained the Tower next to the Abbey. In drawing the grid on the map we have re-introduced the non-sequential environment into the sketches via the reference map. Hence the grid transformation shows us trip sequence versus standard sequence, or trip time against what we might call reference time, or itinerary versus London.

Another explanation of the westward movement of the Tower has to do with London itself. The Tower is located at a great distance from the bulk of tourist London and is finally not conceptually connected into that London at all. The connections via the Strand and Fleet Street are clear enough to the vicinity of Mansion House, but beyond this lies a warren of streets confusing in the extreme. The only clear connection of the Tower to the balance of tourist London is along the Thames itself and this requires a launch excursion, usually terminating at Greenwich. As we shall see, the increasing frequency with which this launch trip is taken by Group L in their free time goes a long way to clearing up the confusion created by the sightseeing tour, for it established the shape of the river (recall the chaotic representations of this in the last analysis) and the unsuspected distance from Parliament to the Tower.

* * *

The second set of grid transformations is shown as Figure 17.2 (A, B, and C). Our class of projections involving extensive curvature of space has shrunk, including now only Monroe, Hendricks, Casyk, Gray and Lincoln. Of these Monroe, Casyk and Lincoln exhibit the great Pagan curves while all of them show the more localized Lincoln variations. Note that Gray and Lincoln are still moving the Tower to the west.

Our second class, showing curvature, but such that it does not affect the entire map surface includes only Eber, Mayo and Palazzo. Mayo and Eber have moved the Tower west, but Palazzo has the river system cleared up. In support of our foregoing contention, both Greenwich and the London Observatory appear on the eastern extremity of the paper.

In the third category, grids with localized disturbances, we
find Gordon, Bloch, Jencks, Montaigne and Lenz. Bloch is still confused about the relation of Piccadilly Circus and Oxford Street, and that this confusion also shows up on the balance of the maps. This tendency, which begins to assume the proportions of the Tower issue, can be stated as follows: leaving the tube at Oxford Circus one proceeds down Regent Street to Piccadilly and then via Haymarket to Trafalgar. This trip is seen in one of two ways. Either it is seen as a trip due north and south with Oxford Circus in the north and Trafalgar in the south, or Regent Street is confused with Oxford Street and the sequence is seen as running east-west. Few kids understood the eastward displacement of Trafalgar even at the end of the trip, though the confusion between Regent and Oxford Streets was soon cleared up. In the pre-departure sessions, Bob insisted on drawing Trafalgar due south of Piccadilly three out of four times. It wasn't until he recalled the existence of Leicester Square that the fog cleared (and Bob's acquaintance with London has been extensive).

The members of the last category, containing right-angle grids, have increased in number, and more importantly, the areas covered by these grids have increased in size as is shown by the greater number of grid lines. Wood, Watson, Giacconda, Baker, Abrams and Nash fall here. Baker's two abberations are extremely local, and the rest of the grids are quite right-angle. My own product is especially remarkable in that it covers all of London shown on the reference map and duplicates the reference grid satisfactorily. But I had been pouring over maps of London and thus had had considerable opportunity to reify my experiential knowledge.

With increasing regularity in the produced grids it becomes increasingly easy to pick out problems in the perception and cognition of London. There are now two of these that we can speak of with authority: the Tower-Parliament problem, and the Oxford-Piccadilly-Trafalgar problem. Furthermore, with two sets of maps to compare we can say something about the development of the mental surface of London. It is possible to consider the first set of maps as showing a landscape characterized by excessive geomorphic youth. This second set shows up a much older landscape, characterized by gentler slopes in the p-cliffs and a general movement towards a flat p-peneplain. This simply means that more kids are producing better approximations of the reference grid, and that fewer are deviating from it markedly.

* * *

The third set does not show a continuation of these trends. These projections are displayed as Figure 17.3 (A, B, and C). The number of projections using extensively curved space has once again
increased. This class now includes: Cruz, Pagan, Lincoln, Giaconda, Casyk, Noyes and Jencks. The great Pagan curves are less in evidence than the more local Lincoln disturbances, which simply mean that London is increasingly grasped in its essentials, but that it is difficult to incorporate new experience easily into this framework. A variety of p-cliffs have arisen, but they result now, not from the Tower and the Piccadilly confusion (though there are remnants of these) but from St. Paul's and Madame Tussaud's. Thus Casyk, for instance, has moved the Tower east, and has begun to resolve the Piccadilly issue, but the major disturbance is caused by the location of St. Paul's west of the Whitehall nexus of points. But then, to a substantial extent, St. Paul's suffered from a similar history to that of the Tower; glanced at in passing in the afternoon portion of the sightseeing trip and located in the eastern confusion of London.

I have placed Eber alone in the second class, though her grid might well be included in the first class. Yet there is a tendency to a straight line right-angle grid that seems to separate her from the others. She makes clear the problems of the grid on this third map of London for all mappers. For instance, the mess she finds herself in in the northwest is due to her attempt to include Camden Town on her map, while excursions to the Soane Museum and the Elephant and Castle account for the balance of the aberrations. Thus, her deviance from a grid is without question a function of p-tectonic activity, or new experience. This general explanation is a covering rationale for the changes between sets two and three of London maps.

In our group of grids with only local disturbances we find five kids: Mayo, Watson, Bloch, Baker and Monroe. While each of these maps shows evidence of new experience, it is of a type more easily integrated into the map than was the case for the first two classes of mappers. Thus, Baker has added Kensington Gardens, but these are obvious extensions of Hyde Park; Bloch has added Marylebone Road, but this is basically an extension of Euston Road; Watson has added a great deal of detail in the Piccadilly area, but this was already located. The result of these additions has meant distortions, but they have remained local in impact. Thus the Marylebone Road has caused a curve in Bloch's second horizontal line, while the Piccadilly detail has meant a violation of scale in the center of Watson's map.

On the whole, this class of mapper has simply been more successful in incorporating added detail, either choosing the additions with care such that they would cause only minor variations, or starting off with stronger grids. But greater success doesn't mean that this class of mapper didn't have to face the same problem; the incorporation of new
Figure 17.3A  Transformations of the third London maps.
Figure 17.3B  Transformations of the third London maps.
Figure 17.3C  Transformations of the third London maps.
experience onto an old map surface.

Only four produced decent replicas of the reference grid: Wood, Abrams, Palazzo and Nash. This is Palazzo's first appearance in this class but the other three have been here with consistency. These three have added new material, especially Abrams, but they had strong grids to commence with. Palazzo's achievement results from a drastic slashing of places mapped. In her final map, she has shown only those places of whose location she was positive. My projection shows an incipient p-cliff developing as a result of explorations in the northwest not balanced by similar excursions in the southwest. In trying to get this all on the map, I have been forced to bend the north out and crush the southwestern corner.

In general, the third set of maps shows us a younger landscape than was apparent on the second set. This resulted from an apparent spurt in exploratory behavior, highlighted by the fact that few of the new places mapped appear on our List of London Places. What we have seen is a young surface in the first set, p-eroded leaving only resistant remnants on the second set, followed up p-uplift on the third set. We have concomitantly seen an emphasis on maps employing Pagan curves and Lincoln disturbances in the first set, have seen that this emphasis diminishes on the second set to be replaced by an emphasis on right-angle grids, and then watched the pendulum return. In other words: new experience leads to an inability to produce the reference grid, resulting in a young surface; time allows this experience to be organized, resulting in a trend toward an older surface and an increased ability to approximate the reference grid.

* * *

The fourth set of maps is shown in Figure 17.4. All of them show no resemblance to the reference grid. All of them show the greatest amount of information shown for the mappers in question. All of them include abtruse places like St. John's Wood, Liverpool Station, Charring Cross, Queen Mary's Garden and White City. Each of these places, mapped for the first time on these fourth maps, caused excessive deviation from the reference grid. If it were permissable to generalize from such scanty data it would simply be to note that the upheaval seen on the third maps is continuing in this last set.

* * *

The grid transformations are powerful images. It would seem that we have been able to trace the contours of a mental
Figure 17.4 Transformations of the fourth London maps.
surface and present them as drawings. This is not true, but this is what the grids inevitably insist on suggesting. Perhaps it might not be unreasonable to let the suggestion transport us for a moment into such a consideration of the reproduced grids. For some reason I am compelled to stare at the grid inferred from Nybia Pagan's first London map. I look at those giant curves and find myself asking the same question over and over again: what is really going on with this map? What do these swirls mean? Was I really justified in drawing the grid on her map as I did?

The reasonable answer is "Yes." I have made the reasonable argument already. Nybia didn't get lost. Nybia did walk down Tottenham Court Road and finally reached the Thames. Obviously in her mind she was capable of making these connections between streets and points and finding her way about in a big city. And the map that she drew for us is an attempt to place on paper these same connections. Thus the map that she drew represents these same connections. Faced with her map I made four or five grids that satisfied the basic rule of navigational sufficiency, and yet something was wrong. The resultant grids were screwy, cock-eyed, messy, insane. After drawing each grid I would ponder it, trying to figure out what had been transpiring in Nybia's mind. And then I drew the grid that I have reproduced. What finally satisfied me about this product was its simplicity, its elegance, its ability to unify seemingly contradictory sets of spatial relationships. And while the grid made sense of the map, it left unanswered the real question: why had she drawn it as she did? This is the question implied by: what do the grid transformations really mean?

Let's try to imagine a set of circumstances that would answer that question. Here is Nybia proceeding down a street. She thinks she's walking north. After a while she reaches a point that she knows is south. How can she possibly reconcile these two facts? She could assume that she had walked in circles. But then why wouldn't she draw this on her map? She could assume that she was wrong about the direction in which she'd started walking or the orientation of her end point. But she shows these contradictorily oriented on her map. What is she to do? Well, she might never attach the two pieces of information together in the first place. That is, she might never add the two hunks of experience up. In which case the contradiction would never appear to her. Or she might assume that she failed to understand the nature of the links between the two experiences and in her drawing concentrate on the two experiences about which she felt some confidence, and let the connections go hang. Or she might suffer from some sort of spatial schizophrenia of a hitherto unidentified type. Or anything else. The possible explanations get very spaced out. I like the first explanation anyhow, that she never added up
the hunks of her experience. It would imply that experience is discontinuous in nature, and there is nothing to suggest that it isn't. And it wouldn't surprise many of us, who have all undergone similar shocks in moving through the environment. How did this street end up here? I thought I'd already passed that building? And so on. How many of us follow up these environmental clues, search out their reasons, learn to see what's going on? Very few. We are in a hurry to get somewhere, and just press on.

Go back and flip through the grids with these thoughts in mind. In some very real sense, thought not that naively perceived, the grid transformations do allow us to look into someone's mind, maybe only for a second, when that person crosses a shocking street and dismisses it from mind, but a glance nonetheless for that. They allow us this glance by organizing the superficial order of the sketch map into a couple of simple sets of lines. There is no saying "But this should be over there and this is too far west," for each map, but the contemplation of a grid that does it all for you.

III

For Rome we present sixteen transformations from each map session. These were chosen at random from the complete set of transformations, simply because it costs too much money to reproduce the whole set for you. And the selection will not seriously hamper our conclusions. The transformations from the first Rome maps are shown as Figure 17.5 (A and B). In the first class of transformations I put those of Eber, Giaconda, Portman, Jane Brown and Phylis Gordon. Three of these maps are characterized by massive but gentle Pagan curves: Gordon, Brown and Portman. That is to say that they consist of grids but grids located in radically curved space. These curves do not result from the mislocation of a couple of points as we know, but from some more fundamental confusion. Eber, who has been drifting toward this class gradually from her London first map, goes all out here producing one of the most systematically confusing grids it was my pleasure to construct. In addition to exhibiting Pagan curves, Eber shows us a not before seen type of involuted space reminiscent of a Klein bottle. Where are the edges of Eber's Rome? It's an intriguing and unanswerable question.

Once we step out of this class, all the grids are surprisingly close to the reference grid. In the next class I have included the transformations of Fisher, Lincoln, Montaigne and Bill Brown. Note that they show excessive curvature of the map surface, but that this curvature is localized.
Figure 17.5A  Transformations of the first Rome maps.
Figure 17.5B  Transformations of the first Rome maps.
In the third class, that of grids with only minor abberations, I have included the grids of Baker, Bloch, Watson, Palazzo and Pierce. Notice the gentle p-cliffs developing in the left center of the grid on some of these, or in the lower right hand corner. Some of these gentle p-cliffs also appeared in the previous class.

Only Heller and Nash have been included in the right-angle class, and Nash’s inclusion here and not earlier is a matter of debate. Heller without question drew the most magnificent Rome map in the set in hand. It was literally crammed with information, highly connected, and, as you can see, produced a remarkable approximation of the reference grid. Nash achieved his comparative success by dealing with only a few places. The remarks penciled on his map were illuminating, both in regard to our London discussion and regard to the following Rome discussion. He says: "I can’t recall our route from the afternoon at all!!" He refers to the sightseeing tour of Rome which had taken place on the day, but before, these maps were drawn. The Rome tour was a duplicate of the London fiasco. There was no connection between the morning leg and the afternoon leg, and as a consequence most of the things seen in the afternoon were not found to be capable of organization into the Rome map developed by the kids in the morning. Even aided with a map, it was only with great difficulty that I was able to follow the route taken in the afternoon to the catacombs. Heading to the other side of Rome, we went around Rome. Now this is marvelous from the point of view of saving time, but disastrous from the point of view of building up a coherent connected image of a city. As a result of this, the catacombs, the Via Appia Antica, the Baths of Caracalla, and the Circus Maximus (refer to map of Rome, Chapter 10) were sources of great confusion on this set of maps, and since there was no opportunity, nor reason, to revisit the vicinity of the catacombs, these provided a great source of confusion throughout the Rome maps. Many kids mistook the location of the catacombs for the northeast and thus rotated their maps 90°. Further confusion was caused by the purchase of maps of Rome with south at the top. Mislocation of the afternoon portion of the trip vis-a-vis the morning caused all the Pagan curves in class 1, most of the abberation in class 2, and accounts for the gentle p-cliffs in class 3. That Nash avoided these problems he has explained. He didn’t even bother to integrate the morning and afternoon experiences but stored them separately (shades of our explanation of Pagan’s behavior in London—it could be the right one). Heller avoided the catacombs but included the trip into Rome taken on the previous day which he was able to integrate, miraculously, for the location of the Olympic Stadium also proved to be a bit much for many of the kids.

Over all, though, given the first London maps, these grids
present us with a surprisingly old smooth first surface.

* * *

This smooth surface continues to predominate in the second set of maps (Figure 17.6). In the chaotic category we place only Lincoln, Pagan, Casyk, Cruz and Jencks. All of them have been here before and four of them have been here with great consistency. Gradually, as we progress through the data, personality associations with the mapping process are beginning to show up in this analysis as in the past. Jencks at least has the west bank of the Tiber figured out including the location of the Olympic Stadium, but is thoroughly confused as to the interior arrangements of downtown Rome. Wreaking great havoc is his idea of the location of the Baths of Caracalla and the Circus Maximus. Pagan is busy proving why we call them Pagan curves. She has placed everything in Rome north of the Tiber and exhibits all the symptoms of this class of grid: Pagan curves, Lincoln disturbances and now, Eber involutions. Cruz's big problems are the relative location of the Stadium and the catacombs vis-a-vis the rest of the city. Lincoln makes a similar confusion, as does Casyk. Casyk wrote on her map: "I didn't want to do this map because I didn't know anything new." This was a common complaint about the second Rome maps: no new experience has transpired geographically. It just didn't make sense, under that constraint, to draw another map. Of course, this applied only to those kids who had used their free time to soak up a sun-tan at the dorms rather than explore the city.

In the second class I have included those grids that, relative to the first class, were leaving the fog. Here we find Eber, Palazzo, Noyes, and Bill Brown. Given Eber's remarkable first Rome grid, she has definitely moved into the second class. She exhibits tendencies toward Pagan curves, but has divested herself of involutions. Most of the confusion can still be attributed to the sightseeing tour. The same applied to Palazzo's tendency to Pagan curves.

In the third class I have included Gordon, Bloch, Giaconda and Montaigne. These products are definitely right-angle grid-like and show only local variation. Compare this grid of Montaigne's with the grid she produced on the London maps. There are enormous similarities. She wrote: "I did not go out today! I forgot a lot." Giaconda wrote: "Did not go to the city." Gordon wrote: "Didn't go anywhere." Nonetheless, either they have studied maps (unlikely), or the passing of time without new experience has allowed them to organize their image of the city, for both Giaconda and Gordon have moved from the class of chaos to the class of mere local variations.
Figure 17.6A Transformations of the second Rome maps.
Figure 17.6B  Transformations of the second Rome maps.
In the fourth class we have only three maps: those of Heller, Watson and Nash. Watson's is the closest to a real grid. Heller has gone afield into parts of Rome where he is less at ease, and Nash has shown the search for the guitar shop (where he bought his guitar) and correspondingly bown up the space of downtown Rome to accommodate the detail.

The general feeling as we move from the first set of maps to the second is one of stasis. There has not been a significant leveling of the already relatively smooth image of Rome, nor has there been a great upheaval of the surface. There seems to have been relatively little new experience of Rome between the two sets and the lapse of time has either led to increasing chaos (in the case of the first class) or increasing grid-likeness (in the case of the third class). It would seem from these data that the effect of time has been to cause forgetfulness or reification. Recall that the depiction of the river (in the last chapter) from set one to set two had increased markedly in consensuality, and that content has been added to the second set both of lines and areas. Though this is true, it seems to have had little general effect on the state of the shape of Roman space.

* * *

The third set of Roman maps—Figure 17.7 (A and B)—tells a wholly different story. There has been an invasion of the first class and total abandonment of the fourth class. It would seem that the kids finally left the dorms, and we know that the morning they drew these maps had included a compulsory visit to the Sistine Chapel. That they went on this trip in large numbers is confirmed by the content analysis that shows the discrimination of the Vatican area into four points on the third maps: the Sistine Chapel, the Bernini Colonnade, the Piazza San Pietro and St. Peter's itself. So, with new experience of Rome itself, we might expect a great deal of crustal activity.

The first class is well represented: Eber, Lincoln, Pagan, Cruz, the two Browns, Seward and Casyk. Most of these are old hands at dealing with this class of projection. Most of them show the full range of class one deformities, including Eberian involution, except, stunningly, Eber herself. Her map is a new type entirely, showing Pagan curves with an incredible variation in grid square size. A great deal of this can be attributed to old problems: the Stadium and the Catacombs, but there are new players as well, namely the Piper Club Discoteque and the Stazione Termini. These two items had a tendency to float north, relative to the Piazza del Popolo, and generally squash the northeast corner of Rome while expanding the western portions, especially when
conjoined with the evil influence of the Hilton Hotel and the Stadium. It may seem remarkable that the mortar main of the sightseeing trip could reach so far, from day one in Rome to day six, but actually anything else would be a surprise. For unlike London, there was no real reason to visit either of these places later and gain a new understanding of their relative locations. Having mapped them once, they were fixed in the mind, and there was nothing to encourage taking a consulting opinion. These locations were reaffirmed on the second map and still nothing—no new experience of these places—intervened. And so they continue to appear mixed up on the third map. It is important—vital, beyond statingly important—to understand the effect of a mistake in geographical comprehension once made and uncorrected. It is devastating to any attempt to construct a complete image consensual to anyone else's. These kids never had any doubt that they knew where the Olympic Stadium and the Catacombs were. Too bad they were off 90° to 180°. Designers of tours with the slightest bit of compassion for the geographical knowledge of the tourists must take into account the necessity of designing these tours in such a way that it is possible to connect the entire day's outing. We saw the effect of a discontinuous tour in London, and we saw what was needed to correct the misapprehension; and now we see in Rome that there are likely circumstances under which the misapprehension will never be changed at all.

In the second class I have included only Miss Bloch. She shows us a fairly rectangular grid, but there is a serious p-cliff—heading into the Catacombs—and some confusion about the bearing and location of the Via del Corso, which she amazingly seems to have confused with the Via Aurelia.

Included in the third class, that of grids with only local disturbances I have included the balance of the projections: Nash, Abrams, Palazzo, Gordon, Watson, Giaconda, and Montaigne. Included in this class are all those kids who normally would have given us right-angle grids, but the local confusions are too marked in this third Rome set to allow that. The confusions are isolated and minor: Piazza Nuvona due south of the Pantheon for instance, or the Spanish Steps as far north as the Piazza del Popolo, or a drastic separation between the Roman Forum and the Coliseum. Montaigne seems to have a fixation on producing a map of one type. Compare all her past grids. They are practically identical, London to Rome and within each city. The Baths of Caracalla (also the Circus Maximus) is the one confusion resulting from the sightseeing tour that was ultimately straightened out and this because the opera, Aida, which most of the kids attended, was held here. In this instance they did have a repeat visit that allowed them to resee the connections.
Figure 17.7A Transformations of the third Rome maps.
Figure 17.7B  Transformations of the third Rome maps.
In general terms this last set shows the result of new experience, resulting in an inability to accurately approximate the reference grid and in a surface characterized by upheaval. Of all the maps seen so far, the third set in Rome gives evidence of the very greatest confusion. You will note that this is true in spite of the results of the content analysis (increasing consensuality, increasing numbers of points and lines and areas from one set to another), and in spite of the increasing agreement about the shape, length, bearing, location and mode of representation of the Tiber. If you are interested in the more complex issue of the relation of these points and lines to each other though time and vis-a-vis a particular standard of reference, content analysis will tell you nothing; nor will graph or pseudograph analysis; nor will the analysis of selected items in isolation. The analysis of sketch maps using the method of grid transformation will get you into the heart of the map. As Bunge would say, it's a bleak prospect once you get there, but there it is. Without discussing the personality issues at stake in this analysis, all we have been able to accomplish so far is:

1) The isolation of certain confusing features in the landscape which may be confusing because:
   a) They are confusing in and of themselves, or
   b) Because they were presented in a confusing manner.

2) The awareness of an incredible range of possible grid transformations all falling within Tobler's most inclusive class.

3) The division of this range into highly subjective categories of approximation of the grid of Tobler's least general class.

4) A description in geomorphic terms of the changes of the surface from one set to another, through time.

IV

But it never does to despair. The Paris data is sufficiently different to keep the momentum of discovery going. There are sixteen grid transformations for the first set of Paris maps and they are shown in Figure 17.8 (A and B). I only placed five kids in the first class of highly variant projections: Nash, Lincoln, Cruz, Palazzo and Noyes.
Nash may or may not belong here. The grid shown for him would certainly seem to place him squarely in this class, but that depends entirely on whether or not one considers his map one or two maps. I did not feel that I could with clear conscience consider it two maps, although the two distinct constellations that appear on the sheet show no indication of any connection whatsoever, and represent entirely disjunct parts of the city. These two parts are, as you see, oriented in opposing directions and this within the context of a compass rose drawn on the map sheet. The balance of the confusions in this class in this set result from a lack of clarity about the side of the river the kids were on when they saw many things. So it is that the Opera appears on the Left Bank while the Ecole Militaire appears on the Right Bank (see map of Paris Chapter II). At least nobody confused the Right Bank with the Left, which rather surprised me as I had supposed they would.

In the second class I have included the grids created by Casyk and Gordon. Gordon clearly belongs here as she has managed to produce a grid, while not right-angle, at least then recognizable as a grid. The deformation is a tribute to her placing the Eiffel Tower and the Ecole Militaire on the Right Bank. Leslie Casyk's problem involves the Opera on the Left Bank and the location of the Louvre halfway to Le Havre. And yet even so it is a grid visible to the naked eye.

The class containing only local, minor deviations from the straight and narrow is rather large: Needham (she drew a complete set of Paris maps), Baker, Giaconda, Pagan and Heller. The only real puzzler in this class is Pagan and yet there can be no doubt that she belongs here. A couple of the maps show the Eiffel Tower on the wrong side of the Seine but within a surrounding matrix that prevented the disaster that this could have meant.

In the class of class grids (right-angle) we find Abrams, Monroe, Eber and Prinz. These aren't perfect grids, but Monroe and Abrams come awfully close. It isn't the first set of grids for Paris that is so surprising. Let's move right on to the second set, without puzzling about the Eiffel Tower on the wrong bank.

* * *

Of course we show only eight grid transformations, as Figure 17.9, but nonetheless they include a full range of mappers. Behold: there are no mappers at all in the first class. Indeed the maps of the second class, where I put Heller, Gordon, Palazzo and Pagan, are remarkably right-angle straight-line grids. Perhaps Heller's belongs here ordinarily, but in Rome or London I might well have placed the other
Figure 17.8A  Transformations of the first Paris maps.
Figure 17.8B  Transformations of the first Paris maps.
three maps in the third class. The minor nudge of the grid on Gordon's map comes from having pushed the Porte St. Denis to the west of the Sacre Coeur and having dropped the Sacre Coeur as far south as the Porte St. Denis. In other words, her problem is abtruse and negligible. Eber has seen fit to diminish the august grandeur of the Louvre producing a restriction in the middle of her grid. Palazzo has drawn us almost a perfect grid.

But look at the rest of the grids; Giaconda, Abrams and Monroe. How can you distinguish as we have been, when all the transformations show straight-line right-angle grids? Abrams' transformation is not so special in Paris, where Giaconda and Monroe can come up with better. What kind of a mental map surface are we seeing here in Paris? It is a peneplain on the second set, an old well-known flat without so much as a resistant outcrop. This difference cannot be explained by the small sample for contained in that sample are mappers who have lodged themselves in previous cities in all classes of grid transformation with regularity. No, there is something about Paris, something we noticed in the content analysis with the florescence of lines on the first map set, something we noticed in the river analysis with impressive consensuality on the first set and total consensuality on the third set. Either Paris is the most legible city we encountered in Europe, or the kids have developed a strategy for dealing with novel environments that is paying off at last. Unfortunately, we have no hint anywhere of the nature of this unknown strategy and must fall back on what is left; and what is left is Paris, gorgeous, marvelous and as legible as the stained-glass windows of the Saint Chapelle. What else can explain this ability to produce grids that are grids the second time out when in every other city such production has never taken place (to the exclusion of the first class of maps)? Nothing that I can think of.

I would be a sorry sucker if after saying all that the third map set wandered off to Xanadu, but behold Figure 17.10. They hold the line. Need I say anything. Casyk is performing as usual and I have placed her in class 2 for show, but she has still managed to put the Eiffel Tower on one side of the Seine and the Ecole Militaire on the other; and Luxembourg is skewed awfully to the west. But the underlying right-angle grid shines through. The amazing thing about David Abrams is his unswerving consistency. His transformation in another city might well have found him alone in class four, with the only approximation of a right-angle grid. But in Paris he is a mere class three mapper. He hasn't changed, but the rest of the kids have. Phylis Gordon joins him in this class, locating the Jardins de Luxembourg south of the Pantheon and the Trocadero too far east. But she has cleared up that problem relating to St. Denis and the Sacre Coeur. Five of our kids are in class
Figure 17.9 Transformations of the second Paris maps.
four, having produced amazing approximations of the reference grid. Paris is a p-peneplain on the second and third map set and extraordinarily flat on the first. It is a different city than London and Rome when it comes to cognitive organization.

* * *

On the fourth try the three kids revert to form. Pagan and Casyk are back in class one and Eber is in class three. Pagan has simply overloaded her map with detail she couldn't possibly keep straight (though the bulk of her map consists of a decent grid) and Eber, whose map runs from the Bois du Boulogne in the west to the Bois des Vincennes in the east, produces a grid with a local variation caused by misplacing the Champs de Mars on the Right Bank instead of the Left.

* * *

Admitting the tenuousness of the classifications used to sort the maps, I still intend to use them. You have seen the data and watched me sort it out, kid-by-kid and class-by-class. Check me if you disagree with any of the foregoing sortings—to a substantial extent—no little quibbles, because what I want to show is the number of kids expressed as a percentage in each of the four classes for each city.

TABLE 17.0

THE GRID TRANSFORMATION
CITY-SORTER

<table>
<thead>
<tr>
<th>CITY</th>
<th>CLASS 1</th>
<th>CLASS 2</th>
<th>CLASS 3</th>
<th>CLASS 4</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONDON</td>
<td>n-25</td>
<td>n-9</td>
<td>n-16</td>
<td>n-15</td>
<td>n-65</td>
</tr>
<tr>
<td></td>
<td>39%</td>
<td>14%</td>
<td>25%</td>
<td>12%</td>
<td>100%</td>
</tr>
<tr>
<td>ROME</td>
<td>n-18</td>
<td>n-9</td>
<td>n-16</td>
<td>n-5</td>
<td>n-48</td>
</tr>
<tr>
<td></td>
<td>38%</td>
<td>19%</td>
<td>33%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>PARIS</td>
<td>n-7</td>
<td>n-7</td>
<td>n-9</td>
<td>n-11</td>
<td>n-34</td>
</tr>
<tr>
<td></td>
<td>20%</td>
<td>20%</td>
<td>27%</td>
<td>33%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The results are unequivocal. If the ability to approximate the reference grid can be taken as a measure of naive veridicality or at least extra-group consensuality, then it can be taken as a measure of legibility.
Figure 17.10  Transformations of the third Paris maps.
A legible city is that city capable of being read and being read means being able to in some way reify incoming material. "Do you read me?" "Loud and clear?" Great, because what our analysis shows is that Paris—for whatever reason—was being read more loudly and clearly than London or Rome. My personal predilections would be that Paris was the most legible city, and so it was, but further that London was much more legible than Rome. But nothing bears out this latter predilection, so I fear my personal predilections don't have much to do with this. Look at the table.

In percentage terms, Paris has three times as many class four mappers as does Rome or London, and nearly half as many class one mappers. London and Rome have fewer class two mappers, but then go back and compare a class two Paris map with a class two map or Rome or London. If I have stacked the deck, it's been against Paris. All three cities have similar numbers of class three mappers, but Paris is able to generate that added inch of clarity that makes all the difference. Nor do these results stand alone. They are supported by three previous analysis techniques that spoke directly to the issue of imageability or legibility. And in each case Paris had the most imageable elements or the most heightened legibility.

Why am I so excited about these results? Because I think that the three techniques in combinations—content analysis, the analysis of isolated elements, and the grid transformation analysis—have been able to address the issue of legibility seriously. None of them do the task alone. Content analysis does not show us anything about space. Analysis of isolated elements does not show us anything about content. Grid transformations ignore isolated elements and content. But together they make beautiful music. Together they address a significant number of those elements that go to make up the cognition of space, neither form nor content, but form and content.

There is another element and that is the personal element. Cognition of space is not a group phenomenon, but an aspect of personality. In the pseudograph analysis we established five strategies that could be used to organize the space of a city through time and clearly showed the futility of addressing the question of cognition or the question of urban imageability employing a single map per respondent. In that analysis we looked at each kid's product through time. Well, the kids and the product are with us once again. What can we say about them?

We would have liked to have been able to show a trend for each kid from a highly distorted approximation of the reference grid on the first attempt to a perfect reproduction of it on the final attempt. But we can
Figure 17.11  Transformations of the fourth Paris maps.
show nothing of the sort. The kids did not change much from set to set in their ability to approximate the grid. After a few sets of maps, you sort of anticipated that a given kid would fall into a given class and were shocked—at least I was—when, for instance, Pagan popped up in class four in Paris. We were so used to seeing her in class one, and Lincoln in class one and Cruz in class one and Nash and Abrams and Watson in class four. The consistency was very great, and as a consequence I assessed the average class for each kid. Below I have ranked them according to this average and the average itself is shown. I don't think there are any surprises, but the information will be valuable to compare with other rankings of the kids that we shall soon be seeing.

**TABLE 17.1**

<table>
<thead>
<tr>
<th>GROUP L RANKED ACCORDING TO GRID TRANSFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hendricks</td>
</tr>
<tr>
<td>Gray</td>
</tr>
<tr>
<td>Seward</td>
</tr>
<tr>
<td>J. Brown</td>
</tr>
<tr>
<td>Cruz</td>
</tr>
<tr>
<td>Lincoln</td>
</tr>
<tr>
<td>Casyk</td>
</tr>
<tr>
<td>Noyes</td>
</tr>
<tr>
<td>Jencks</td>
</tr>
<tr>
<td>Fisher</td>
</tr>
<tr>
<td>Pagan</td>
</tr>
<tr>
<td>Jones</td>
</tr>
<tr>
<td>Portman</td>
</tr>
<tr>
<td>Jaeckel</td>
</tr>
<tr>
<td>G. Aiken</td>
</tr>
<tr>
<td>B. Brown</td>
</tr>
<tr>
<td>Gordon</td>
</tr>
</tbody>
</table>

The only kids on the ranking that I would want to really exclude from the list would be Prinz, Portman and Jones, simply because we have too few maps. But I will leave them for the time being since it is the best we have. The meaning of the ranking is fairly obvious. The higher you rank, the greater the consistency with which you produced a map of the closest class. Due to the regularity with which most kids appeared in a single or adjacent class, I tend to view the average class figure, less as an average than as a class assignment number. Thus Miss Bloch did not appear often in class two and four to
achieve her average of 2.8, but rather spent most of her time in class
three with a dip on a single occasion to class two. A few were all over
the board, like Giaconda and Palazzo, but most of the time the average
class number says where you were, not where you weren't.

Since the ranking will mean most in conjunction with other
similar rankings, I will delay its discussion until that time. I have
included it at this point to make luminously clear the possibilities of the
analysis technique for going both ways—speaking about the city and
speaking about the kid. It would seem apodictive, given the nature of the
data, that it could go both ways, but such is the perversity of the human
being regarding his handiwork that he seldom realizes its dual character:
that it speaks of the human being while it speaks of the environment. A
map does this perhaps more articulately than any other artifact of man.
It is, literally, of the world and of man.

V

This chapter may have seemed forever, but it was necessary.
It has jumped the last major hurdle standing between the student of mental
maps and his goal of understanding. All the pieces but one are now in
place. That comes next. But before finishing, what have we done in this
chapter?

I will not bore you with a recital of the defects of the
arrangements of London and Rome that we have uncovered. I will not
bore you with a discussion of p-geomorphology. I will not try to erect a
genetic sequence of the development of map projections. There is nothing
to support it. What we have done outstandingly well in this chapter is
point out directions to be followed, directions I could have followed, were
life quite as long as art, but directions others must take instead.

1) Assuming the possession of a decent data set such as we
possess in this study (the data sets elicited by instruc-
tionless mapping will get nobody anywhere) it would be
possible to regard the grid transformations as legitimate
projections and analyze them rigorously. This we have
not done, and could be profitably accomplished using
the techniques available to the professional cartographer.
Conceivably these will lead to a rigorous classificatory
system for application to mental maps that will avoid
the lackluster and naive designations of earlier students
of mental maps (survey, net, route, area types) or our
desultory descriptors of good and bad approximations
of a reference grid. Our analysis has shown, if nothing
else, that more is involved than was thought, and that consequently more is required than present energy available. It could be fun and interesting.

2) Assuming a decent set of grid transformations such as we possess, it would seem to be valuable to plumb geomorphology for all it's worth as a descriptive language of wide application to developing surfaces of all sorts, but particularly mental maps. Unfortunately, I lack the knowledge and understanding of the field necessary to have pulled off a decent use of a beautiful language, and have likely been the cause of no little merriment in my use of technical terms. But if I have been lacking in wit myself, let me, like Falstaff, be the source of wit in others.

3) Assuming a decent set of grid transformation such as we possess, it would be possible to achieve one of the dreams of the student of mental maps: the construction of a mental base map. The simplest approach would be to use a median projection, such as from class two or three, and project the content analysis, not on a standard map, but rather on such a median projection. This would be better than what we have. Better still would be the construction of a mental base map that would in some way average out or incorporate all of the significant deviations that appear.
"When we are collecting facts," he replied, "especially when we are absolutely in the dark, we are not bound to consider their relevancy in advance. The length of this rope is a fact and that fact might acquire later some relevance which it does not appear to have now. There is no harm in noting irrelevant facts, but a great deal of harm in leaving any fact unnoted. That is a general rule."

"...R. AUSTIN FREEMAN
Pontifex, Son and Thorndyke"
The foregoing techniques of analysis with the exception of the content analysis, have dealt exclusively with the underlying network of points and lines, the skeleton of the map. This came to be, because the points and lines appeared together on a single sheet of paper, while the areas appeared on tracing paper overlays. A second reason had to do with the nature of the analysis of the skeleton, which involved no measurement, but rather mere counting. The counting of the areas, while an admittedly interesting task, could never be more than part of the obvious task including measurement of the actual size of the areas.

For the analysis, I soon found it necessary to establish criteria that would separate areas per se from each other and from other non-areal phenomena. These boiled down to three rules:

1) Rivers and other "fat" line phenomena were to be neither counted nor measured as areas, no matter how areal they might appear.

2) Areas that were not completely bounded by drawn edges were to be counted, but not measured. Even when a drawn edge intersected the edge of the sheet, it was not measured, since we did not know its total extent.

3) Each bounded area was to be counted and measured as a separate entity, no matter how much it overlapped another area. Thus it would have been possible to have drawn a number of areas such that the total area included exceeded the total paper surface.

<table>
<thead>
<tr>
<th>SESSION</th>
<th># RESPONDENTS</th>
<th>TOTAL # AREAS</th>
<th>AVERAGE # AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>London 1</td>
<td>27</td>
<td>140</td>
<td>5.19</td>
</tr>
<tr>
<td>London 2</td>
<td>16</td>
<td>93</td>
<td>5.81</td>
</tr>
<tr>
<td>London 3</td>
<td>15</td>
<td>84</td>
<td>5.60</td>
</tr>
<tr>
<td>London 4</td>
<td>4</td>
<td>27</td>
<td>6.75</td>
</tr>
</tbody>
</table>
Despite decreasing sample size in each city, there is a general increase in the average number of areas demarcated. In general there is a rise from session one through session three or four bearing out our contention that areas are the last to be elaborated upon. This data has shown up in the content analysis already, though in truncated form (only those areas mentioned by £2.5% or more of the kids were included in that analysis). The areal question was twofold. Was the amount of paper being covered growing in size or shrinking in size? And was the average size of each area drawn growing or shrinking? I had no expectations, for I was capable of postulating no reason for a systematic growth in the size of individual areas, though I did anticipate seeing a growth in the amount of paper covered by areas. The obvious conclusion of the process of geographic cognition is to be able to divide the entire area in question into discrete space-filling areas. Were our kids moving in that direction? Was it a valid hypothesis anyhow? The answers to these questions are found in Table 18.1.

<table>
<thead>
<tr>
<th>SESSION</th>
<th># RESPONDENTS</th>
<th>TOTAL # AREAS</th>
<th>AVERAGE # AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rome 1</td>
<td>24</td>
<td>88</td>
<td>3.67</td>
</tr>
<tr>
<td>Rome 2</td>
<td>20</td>
<td>89</td>
<td>4.45</td>
</tr>
<tr>
<td>Rome 3</td>
<td>16</td>
<td>73</td>
<td>4.56</td>
</tr>
<tr>
<td>Paris 1</td>
<td>12</td>
<td>63</td>
<td>5.25</td>
</tr>
<tr>
<td>Paris 2</td>
<td>6</td>
<td>34</td>
<td>5.67</td>
</tr>
<tr>
<td>Paris 3</td>
<td>5</td>
<td>33</td>
<td>6.60</td>
</tr>
<tr>
<td>Paris 4</td>
<td>3</td>
<td>26</td>
<td>8.67</td>
</tr>
</tbody>
</table>

TABLE 18.1
SIZE OF AREAS AND AMOUNT OF PAPER COVERED (in square inches)

<table>
<thead>
<tr>
<th>SESSION</th>
<th># RESPONDENTS</th>
<th>TOTAL AREA FOR ALL MAPS</th>
<th>AVERAGE TOTAL AREA PER MAP</th>
<th>AVERAGE SIZE OF AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>London 1</td>
<td>24</td>
<td>313</td>
<td>13.0</td>
<td>2.23</td>
</tr>
<tr>
<td>London 2</td>
<td>16</td>
<td>209</td>
<td>13.1</td>
<td>2.25</td>
</tr>
<tr>
<td>London 3</td>
<td>15</td>
<td>155</td>
<td>10.3</td>
<td>1.84</td>
</tr>
<tr>
<td>London 4</td>
<td>4</td>
<td>77</td>
<td>19.2</td>
<td>2.85</td>
</tr>
<tr>
<td>Rome 1</td>
<td>23</td>
<td>174</td>
<td>7.6</td>
<td>1.97</td>
</tr>
<tr>
<td>Rome 2</td>
<td>16</td>
<td>115</td>
<td>7.2</td>
<td>1.29</td>
</tr>
<tr>
<td>SESSION</td>
<td># RESPONDENTS</td>
<td>TOTAL AREA FOR ALL MAPS</td>
<td>AVERAGE TOTAL AREA PER MAP</td>
<td>AVERAGE SIZE OF AREAS</td>
</tr>
<tr>
<td>---------</td>
<td>---------------</td>
<td>------------------------</td>
<td>---------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Rome 3</td>
<td>14</td>
<td>164</td>
<td>11.7</td>
<td>2.25</td>
</tr>
<tr>
<td>Paris 1</td>
<td>11</td>
<td>71</td>
<td>6.5</td>
<td>1.13</td>
</tr>
<tr>
<td>Paris 2</td>
<td>6</td>
<td>43</td>
<td>7.2</td>
<td>1.27</td>
</tr>
<tr>
<td>Paris 3</td>
<td>5</td>
<td>47</td>
<td>9.3</td>
<td>1.41</td>
</tr>
<tr>
<td>Paris 4</td>
<td>3</td>
<td>42</td>
<td>13.9</td>
<td>1.61</td>
</tr>
</tbody>
</table>

Fundamentally it turns out that the average size of areas increases generally from the first session to the last session (last column on the right), though there are the anomalies of the decreases from London 2 to London 3 and from Rome 1 to Rome 2. These anomalies do not parallel the growth in the number of areas for Rome whereas they do for London. While the number of areas grew in Rome their average size was shrinking, and the number of areas was decreasing in London while their size was decreasing as well. But these observations do not seriously disturb the overall tendency shown, the average size of areas increasing in size through time. Of course, the fact that the average size of areas increases emphatically does not mean that, for instance, Hyde Park grew through each session, for we don't know that this increase in size is true for any particular area, only for areas in general.

Furthermore this trend on the part of average size of areas is paralleled by a trend in average size of total area per map. On the first London map an area of 13 square inches was demarcated on the average, but on the fourth London map an area of 19.2 square inches was demarcated. This general tendency for growth is also true for Rome and Paris, except for the anomalies noted above in respect to London and Rome.

(It may be observed that the number of respondents varies from Table 18.0 to 18.1. This is due to the fact that we counted unbounded areas though we didn't measure them. Thus those kids who showed only unbounded areas were not included on Table 18.1.)

Now my attention turned to the kids. What could we learn about them from the areal analysis? I ranked all the kids as to number of areas per map set, and then again as to the total amount of paper covered per map set. This resulted in twenty-two sets of rankings. The rankings were not comparable because a kid often appeared on one and not on another, because the number of kids per ranking varied widely.
and because of the often distressingly small size of the sample. If there was any order in the data we couldn't find it. Kids wandered up and down the rankings as though they were lost. Several attempts at averaging found all the kids in the same place. There was no systematic variation in the rankings from session to session. And so on. Nothing.

Yet I was unwilling to assume that there was no organic link between the use of areas and the kids themselves. I turned my attention to lists of largest areas and made a remarkable discovery. But before I can tell you about that, I must describe the overlay analysis.

* * *

It must not be forgotten in our concern with points-lines-and-areas that there was another type of information shown on the maps. This appeared on separate sheets of tracing paper and yet related specifically to the points, lines and areas underneath them, for the kids were all along using the extensive vocabulary of Environmental A to describe and annotate the spatial world drawn. These overlays have already proven their worth, though you have not been privy to their role. They have been used to elucidate obscurities on the skeleton and on the areal overlay. Thus, often a question arose as to the nature of a given point or line, generally unlabeled. In this case one would look to the linguistic overlays to search for further clues. There unidentified points resolved themselves into traffic circles or shops or hotels or restaurants, bars, museums and so forth, while lines were explicitly footpaths, streets, superhighways, rivers and what have you. They were particularly invaluable in describing the character of areas, and it was here that things began to fall into place.

Of the 213 maps of London, Rome and Paris, 65% of them were accompanied by descriptive overlays. No one, for example, was requested to use the Environmental A language in the first London session, to avoid an overload on the first try. Further, there was an attrition in the use of the language at subsequent sessions for some kids. A tired kid would draw the skeleton. Maybe he would complete the areal overlay, but energy was needed to complete four descriptive overlays. Thus, these overlays suffered most drastically from the caprice of the moment, from fatigue, and what have you. This explains the fact that only 65% of the maps were accompanied by overlays.

Each of the 138 sets of overlays was subjected to a quantitative analysis. Counting each isolated symbol, it was readily discovered that there was a total of 6,216 instances of symbol usage on the 138 maps, or an average of 45 symbols per map. This does not mean 45 different
symbols per map, but rather 45 instances of the usage of all symbols on the map. The next analysis performed determined the percentages of the different classes of symbols used. Reference to Chapter 3 will show you the full range of Environmental A symbols and show the manner in which they were broken down into four groups: point, line, area, and attributive symbols. These symbols were used in the same amounts from one map session to the next, but there was an increasing use of the attributive symbols and a decreasing use of other symbols, particularly the areal symbols through the mapping sessions. This change did not take place within a given city but over all the map sessions. Displayed in Table 18.2 are the percentages of each class of symbol for each map session.

**TABLE 18.2**

SYMBOL USAGE BY CLASS AND MAP SESSION

<table>
<thead>
<tr>
<th>SESSION</th>
<th>% POINTS</th>
<th>% LINES</th>
<th>% AREAS</th>
<th>% ATTRIBUTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>London 1</td>
<td>37%</td>
<td>19%</td>
<td>17%</td>
<td>27%</td>
</tr>
<tr>
<td>London 2</td>
<td>36%</td>
<td>17%</td>
<td>17%</td>
<td>32%</td>
</tr>
<tr>
<td>London 3</td>
<td>35%</td>
<td>18%</td>
<td>14%</td>
<td>33%</td>
</tr>
<tr>
<td>London 4</td>
<td>27%</td>
<td>22%</td>
<td>12%</td>
<td>39%</td>
</tr>
<tr>
<td>Rome 1</td>
<td>42%</td>
<td>11%</td>
<td>14%</td>
<td>33%</td>
</tr>
<tr>
<td>Rome 2</td>
<td>33%</td>
<td>17%</td>
<td>15%</td>
<td>35%</td>
</tr>
<tr>
<td>Rome 3</td>
<td>35%</td>
<td>17%</td>
<td>13%</td>
<td>35%</td>
</tr>
<tr>
<td>Paris 1</td>
<td>20%</td>
<td>20%</td>
<td>19%</td>
<td>41%</td>
</tr>
<tr>
<td>Apris 2</td>
<td>20%</td>
<td>22%</td>
<td>12%</td>
<td>44%</td>
</tr>
<tr>
<td>Paris 3</td>
<td>19%</td>
<td>23%</td>
<td>11%</td>
<td>47%</td>
</tr>
<tr>
<td>Paris 4</td>
<td>19%</td>
<td>21%</td>
<td>6%</td>
<td>54%</td>
</tr>
</tbody>
</table>

I find the results shown above to be rather intriguing, and especially relevant to the redesign of Environmental A. The area symbols never carry their weight. Some of this may be associated with the simple fact that there are more points and lines than areas, but a great deal of it has to do with the time it takes to produce a single area symbol. As we created the symbol system it seemed intelligent to make the line symbols to a certain extent a linear sequence of point symbols and the area symbols a conglomeration of line and point symbols. But this also meant that the area symbol was ipso facto more complex than the symbols of the other classes. The small and decreasing role they
played as seen above is clear evidence of the need for a different approach to the design of area symbols for use in the drawing of sketch maps. The line and point symbols are used inconstantly but within a certain range, and reflect, to a substantial degree the map element emphasized in a given city. Thus line symbols are most prominent in Paris—but the general emphasis was on streets in Paris, whereas Rome shows a dependence on point symbols greater than in any other city—but points were emphasized in Rome. And so on. However, the use of attributive symbols shows a steady increase throughout the map sessions. In absolute terms the increase is even more marked. There is no mystery about this. In the first place the symbols were succinct, essentially point symbols. In the second place they were more powerful linguistic symbols, symbols whose import was more apparent, less abstract than in any other class of symbol. In the third place, and most importantly, they allowed the kids to make value judgements about the items in question. This is the only chance the kids had to do this graphically, and pointedly. They could express opinions on the stereomatri ces and the adjective checklists, but only in a round-about implied fashion. Here they could speak to the point in language that was "graphic" in both senses of that word.

Let's take a look at the symbols in greater detail. There are 52 items of judgement listed alphabetically in the attributive section of Environmental A. Some of these employ the same symbol, so there are actually only 44 different symbols. Each of these symbols has associated with it a connotation: positive, negative, neutral. Some of the symbols are obvious in their connotations; were, for instance, clearly negative in their connotation, while and were clearly positive in character. Some of them went both ways. The division sign, for example, was defined as "Ancient: not necessarily old in years, but old in spirit." When this symbol was found in conjunction with a drawing of a rat and followed by the picture of a man (spelling out "dirty old man"—common in Italy) the connotation of "old" was negative. But when it was used to describe the Roman Forum, while it might have meant it negatively, it was too neutral an association to allow me to consider the division sign a negative sign. Each symbol was assigned a valence, 1 for a positive connotation, -1 for a negative connotation, and 0 for a neutral or ambiguous connotation. We are actually being terribly scrupulous here, for we learned so much about the kids' attitudes toward a sufficient number of phenomena that we could assign a valence to non-attributive symbols. Thus, given the isolation of factories in the pre-departure Ideal City maps, we would be entirely justified in assigning to a factory symbol a negative weight. The opposite might be said about parks. Further, the constant association of positive attributive symbols in conjunction with park symbols and the
constant association of factory symbols with negative attributive symbols, reinforces this feeling of justification. Nonetheless, we have not done so, simply because the symbols themselves were not absolutely explicit.

Using the valences described above it was a simple matter to assign a valence to any map sheet by simply summing the valences and taking the average. Thus the existence of a 1, a -1, and an 0 would result in an overall assessment of 0. The positive has balanced the negative and the neutral concurs in an overall assessment of neutrality. All maps were assessed in this manner and a map valence derived. These valences were calculated for each of the 138 maps using attributive symbols. The data could be used in several ways. The kids could be ranked as to their attitudes session by session. This was done. No clear propensity resulted from this analysis, but certain things became clear. Often well-integrated maps showed a positive valence, while fragmented maps bore a negative valence. Many of the maps with remarks like "I didn't want to draw a map today because I was not feeling well" also showed negative valences. Thus, on a session by session basis, the valences clearly related to the nature of the day for each kid, within certain tolerances. But the data can also be aggregated to provide an assessment of each city. These results appear as Table 18.3.

<p>| TABLE 18.3 |
| VALENCEs FOR LONDON, ROME &amp; PARIS |</p>
<table>
<thead>
<tr>
<th>Number of Maps Analyzed</th>
<th>Valence</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>58</td>
</tr>
<tr>
<td>Rome</td>
<td>57</td>
</tr>
<tr>
<td>Paris</td>
<td>23</td>
</tr>
</tbody>
</table>

There can be no question about how the kids liked the three cities in which they spent the most time. Rome was positively disliked. London was positively liked. Paris was genuinely loved. Something might be said about the attitude towards Rome. All through Italy, nay, long before we arrived in Italy, the girls exhibited definite concern about the manner in which they would be treated by the male portion of the Italian population. This apprehension manifested itself at the first opportunity in Venice where every glance accorded a girl was interpreted as an actual advance. Girls were approached by Italian men, and there
were a couple of distinctly unpleasant incidents (the first occurring on the first launch trip into Venice), but the girls developed an unwarranted attitude that amounted to paranoia about the attention they received from Italian men. Now, I won't say that the heat in Italy didn't bother them, or that the distance of the dorms from downtown Rome didn't bother them, but beyond these lay a fear of walking the streets of Rome alone because of the perceived sexual aggressiveness of Italian men. This is not to comment on the truth of their belief. The fact that they believed it was sufficient. The negativism of the Rome image was, however, to more than this. Italian cities in general, and Rome in particular, were also seen as dirty. The contrast with London in this respect is impressive. London is covered with pictures of brooms: clean, clean, clean; but Rome is covered with pictures of rats and litter: dirty, dirty, dirty.

There are a couple of points about this. One of them is the ability to come to a consensus of opinion regarding a city on the basis of subjective assessments. The adjective checklist was designed to do this, but Environmental A provides another method and check, in addition to permitting these likes and dislikes to be specified for particular locations. Thus, Environmental A enables us to discuss preference with a truly spatial framework. The other is the obvious, but unexploited, possibility of re-examining all the previous analyses in the light of this subjective information. We now know which maps are positive and which are negative. Did these attitudes effect other aspects of the maps? You can be sure that they did. You can be sure that every map was shaped to a certain extent by the attitude of the mapper toward his subject. It affected his energy level, and his concern for care and accuracy, and his amount of detail, and even seemingly little things—like whether to erase a mistake or instead to cross it out.

A brief summary of the use of the Environmental A map notation language is in order before moving on:

1) The language was used on 65% of the maps collected in London, Rome, and Paris, suggesting a high level of acceptance.

2) The point and attribute symbols were more popular than the line symbols which were more popular than the area symbols, suggesting the need for redesigning the areal symbols, and perhaps for working over the attributive symbols to make them an even sharper tool.
3) The attributive symbols were either positive, neutral or negative in character.

4) By studying the relationship between the attributive symbols and other symbols it would be possible to assign values to a large number of non-attributive symbols.

5) By assigning a valence to an attributive symbol, it is possible to assess the attitude toward a particular location on the map and toward the environment as a whole. Thus the sketch map becomes an explicit tool for the evaluation of environmental preferences.

* * *

So here I was with a bunch of valences and a bunch of large areas. Could they be combined in any way to make sense out of the areas displayed on the map surface? I realize that I could assign a valence to each area and see what that would show. At first the results were unclear. Some of the largest areas had positive valences and some of them had negative valences. Very rare was a large area with either no attributive symbol, or with a resulting neutral valence. In fact, most of the areal valences were extreme. Either close to -1 or close to 1. But what was the key to unlock these results? When it first became apparent to me, it was like a rainstorm cutting through the soggy heat of a hot summer afternoon: if a large area had a negative valence, then the map had a negative valence; but if a large area had a positive valence, then the map had a positive valence. The correlation needed to test for significance for it was a perfect parallel. That is, every positive map had a positive valence in the largest area, and every negative map had a negative valence in the largest area.

The number of these parallels becomes important. Only 137 of the total 312 maps of London, Rome and Paris included totally bounded areas, and only 138 maps employed areal overlays. These two sets of maps did not overlap completely. The size of the population that both drew bounded areas and used the overlays was a scant 89, so we were forced to compare areas and valences on only 89 maps. However, these maps included the efforts of twenty-three kids and were drawn from all eleven map sessions. Thus the maps used in this particular study were highly representative of Group L, were drawn from the entire length of the tour, and amounted to a sample size of 89.

The significance of the fact that every positive map had
positive showing in the largest area and vice versa is rather enormous. Examine Table 18.4. Look at that list of places. What are the characteristics of these places? Bluntly, they are not characterized by anything

**TABLE 18.4**

**LARGEST AREA (ON A GIVEN MAP) ON THE FIRST LONDON MAPS**

<table>
<thead>
<tr>
<th>AREA</th>
<th>% OF TOTAL AREA DEMARCATED</th>
<th>% OF PAPER SURFACE COVERED</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Bank</td>
<td>45%</td>
<td>14.8%</td>
</tr>
<tr>
<td>Piccadilly</td>
<td>67%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Area Around Dorms</td>
<td>16%</td>
<td>9.6%</td>
</tr>
<tr>
<td>Shopping</td>
<td>28%</td>
<td>6.7%</td>
</tr>
<tr>
<td>Westminster</td>
<td>60%</td>
<td>4.0%</td>
</tr>
<tr>
<td>University</td>
<td>37%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Petticoat Lane</td>
<td>51%</td>
<td>9%</td>
</tr>
<tr>
<td>Shops</td>
<td>46%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Hyde Park</td>
<td>57%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Factories</td>
<td>65%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Middle</td>
<td>65%</td>
<td>8.6%</td>
</tr>
<tr>
<td>Shops</td>
<td>45%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Shops</td>
<td>100%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Piccadilly</td>
<td>48%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Soho</td>
<td>55%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Shopping</td>
<td>63%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Carnaby-Oxford</td>
<td>53%</td>
<td>20.6%</td>
</tr>
<tr>
<td>Shopping</td>
<td>49%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Museum</td>
<td>32%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Historic</td>
<td>41%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Bloomsbury</td>
<td>44%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Shopping</td>
<td>33%</td>
<td>14.1%</td>
</tr>
<tr>
<td>Hyde Park</td>
<td>24%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Piccadilly</td>
<td>86%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

in particular. They are drawn from the entire possible range of areas. Some of them refer to specific object-like areas; Hyde Park. Others refer to political units; Westminster. Others to neighborhoods; Bloomsbury. Others to vaguer areas with locational anchors; Carnaby-Oxford. Still others are generic; shopping. Or refer to landuse in the traditional sense; factories. Or are unintelligible; middle. They are not all parks or all industrial or all anything. THE LARGEST AREAS RUN
$\text{THE FULL GAMUT TYPES OF AREAS.}$

Okay. Now let's check out the implications of this discovery. Take a map from the third London session that had as its largest area something called "Factories." This area accounted for 65% of the total area demarcated on this map, and for 7.3% of the paper surface (which was the seventh largest area on the list). Now it so happens that this area has associated with it an attributive overlay containing a picture of a rat (dirty), a set of inpointing arrows (crowded or congested), and three minus signs (the most explicit negative symbol). Period. The valence of this area is -1. But there were five other areas drawn on this map: hotels, dorm areas, university area, park and medical area. The five other areas all had either neutral or positive valences. But from one area, despite the evidence of the other miniscule areas, we can leap to the valence of the map as a whole. The entire map earned a valence of -0.2, not terribly negative, but certainly far from positive. (In case you're confused by the fact that only one area had a negative valence and five had neutral to positive valences and yet the map as a whole had a negative valence, I might point out that in assessing map valence I considered the attributes applied to all points and lines in addition to areas; in addition to which, the negativism of the largest area was very negative, five negative symbols being found there alone.)

What does this mean? It means that there is a connection between the assessment of the largest area and the map as a whole, as though the attributes of the largest area were capable of casting a pallor or a light on the city as a whole, or as if the city were impregnated by the attributes of this area. After all, the largest area discussed above was not simply the largest area, but far and away the largest area. So the suggestion of power of the largest area is not untenable. But in a way it is begging the question to suggest this. A more likely relationship is that the general attitude toward the city as a whole finds its expression in the largest area, that in effect, the general attitude toward the city creates the largest area. The argument might run something like this,

Here is a mapper, mad at London for whatever reason (bad food at the dorm, poor sleep the night before, a hangover, disappointment with some "sight," anything at all), and this mapper is drawing a map. Having created the underlying skeleton (which leaves less room for emotionalism), the mapper attacks the areal overlay. A couple of small local areas are sketched in, when the mapper begins to draw the areas of factories. As the line is being traced the kid realizes that he's mad and starts to take it out on the city. How? Not by exaggerating the nice things about the city. No, by exaggerating the bad. So the "Factories Area" grows and grows until it accounts for a large portion of all the
areas drawn, for a larger portion than any other area. Along comes the attributive overlay: that factory area gets it. Minus, minus, minus. A rat and a litter basket for added measure. Pow! For London is a mess. Anger has been satisfied. The kid "has got back at" the city by drawing an ugly map of it. It's the same impulse that produces nasty graffiti. Recall at this point our discussion of the drawing of the Tiber, the release of the hand and pencil that resulted in those baroque curves, those elaborate cirriforms. Much the same is taking place here. THE AREA GETS OUT OF HAND. Out of hand, an interesting way of putting it. The hand traces out, not the geographical area, but the emotion. The same is true to a heightened degree when it comes to positive feelings. Feeling good about a city is apt to result in enormous parks, in shopping districts loaded with multiplication signs (for "now" or "with it") or exclamation points (for a feeling of "Wow").

What I am saying can be boiled down to this: affection, emotion, feeling, desire, attitude all play a part in the cognition of space. One perceives an industrial area. The size of that area cognitively will vary with the attitude toward industry and the attitude toward the city as a whole.

"I hate London," says one kid.

"I love it," says another.

"How can you? It's (UGH) all factories!"

"Not where I've been. It's mostly parks."

Such a conversation is possible even if the experiences of the kids have been identical. London, of course, is neither park nor factory, but park and factory. It all depends on how you see it. The fact that five kids saw factories in London and located factory areas in what is actually Holborn, Clerkenwell and The City (Marina Giaconda, George Aiken, Bill Brown, Erica Cruz and Karl Prinz) is fairly conclusive evidence of what I am saying. What is a factory for these kids? And what are they doing all over downtown London. Factories? I located a factory area on my first map of London, misled by the stacks of the Battersea Power Station into believing that it was a mill of some sort. But I had no factories on subsequent maps because I encountered none. Yet these kids saw factories all over the place. What's going on?

I maintain that the association of largest area with the map in terms of subjective assessment shows that attitude and emotion are not likely to be separated from the perception and cognition of space, and that
emotion can create factories out of warehouses and small shops, and that emotion can escalate them into areas, and then into large areas. And that the emotion or attitude that did this then colors the map accordingly. And if I am all overboard on this, still emotion and attitude shape, perhaps not to the extent that I maintain, the character of the map. This is the sense I make out of the area and overlay analysis.

Let me see if I can summarize the content of this chapter. In the first place, we have looked at the areas. Areas were seen to grow in number and size through map sessions within an individual city. Further, the areas demarcated covered increasingly larger portions of the space of the city. That is, the kids were able to discriminate the city into increasingly greater numbers of areas with increasing experience, and these areas grew in size and total paper coverage. It has been additionally demonstrated that the attitude taken toward the largest area (positive, neutral, or negative) is the same as the attitude taken toward the map as a whole. This was true for all 89 relevant maps. This was used as evidence to support the contention that affection plays an important role in the cognition of space.

This final conclusion leads to the following remark: that space per se (whatever that may be taken as meaning) is not an abstract, impersonal facet of existence, but is rather cognized as part of a general system including values. The dimensions of space vary with this larger system and may not be studied outside of it, particularly in a developmental context. It further suggests that such aspects of the environment as legibility and imageability are fruitlessly studied outside a preferential framework. We have seen that Paris, along a variety of measures, proved to be the most legible of the three cities visited. Now we have seen that it is the city most positively evaluated using subjective assessment. The two sets of conclusions seem to be related. Is Paris liked because it is legible or is Paris legible because it is liked? Or do the two grow together little by little, liking finding reinforcement in legibility, and legibility in liking? Or is a legible city nothing more than a liked city? Are all legible cities liked and are all liked cities legible? Does legible mean nothing more than liked? These are questions that need answers and the answers may be sought using the techniques pioneered here, in conjunction with many others. The answers, my friend, are blowin' in the wind.

That doesn't mean they're easy to get hold of.
I distrust a case that rests entirely on circumstantial evidence. A learned judge has told us that circumstantial evidence, if there is enough of it, is not only as good as but better than direct evidence, because direct evidence may be false. I do not agree with him. In the first place, direct evidence which may possibly be false is not evidence at all. But the evil of circumstantial evidence is that it may yield false inferences, as it has often done, and then the whole scheme is illusory. My feeling is that circumstantial evidence requires at least one point of direct evidence to establish a real connection of its parts with the question that is to be proved.

...R. AUSTIN FREEMAN
Pontifex, Son and Thorndyke
This chapter is, in the auctioneer's parlance, a rather Miscellaneous Lot, composed of snippets and snaps of this and that, snippets and snaps that go a long way toward tying the whole project up in a bright shiny ribbon. The first thing to be attacked in this chapter is the bus seating analysis, to which some of the foregoing analyses are closely tied. Then we shall ever so briefly turn our attention to a contemplation of the post-trip maps and skim our eyes over the whole panorama of maps, from the first home town map to the most recent arrivals from the kids.

The total mass of bus seating charts is too complex for analysis here. The main reason for this is the fact that at least four types of vehicles were used on the trip. The English and French tour buses had radically different arrangements of seats, and were larger than the continental—or Dutch—tour bus. There are forty-five of these Dutch charts and they are all comparable along any dimension. These will be the basis for our analysis.

Upon arrival home in the States I composed a master bus seating chart on which I compiled all the Dutch bus seating charts. This chart showed for each single bus seating session the occupant of each seat. This chart was then transformed into a chart showing the sequence of seats occupied by each kid. Using the first of these charts—the Seat Chart—I was able to watch a particular seat on the bus and watch the changes in habitation. Using the second of these charts—the Kid Chart—I was able to watch a given kid move around on the bus. On both charts there are a series of blanks, on the Seat Chart showing empty seats, on the Kid Chart showing the absence of a kid from the bus at any time.

Due to the importance of location on the bus (whether back, middle, or front of bus) I was rather anxious to create a typical bus seating chart. There were at the outside (including Bob and me) only thirty-nine passengers while at the same time there were forty-five seats. To create the typical bus, I would have to identify those empty seats. From the Seat Chart it was a simple matter to count the blanks for each seat and rank all the seats on the bus in order of frequency of emptiness. This ranking was then graphed, and three classes emerged. Figure 19.0 shows the location of these three classes of empty seats. Much to my amazement, the resultant map seemed to my memory a decent presentation of affairs. The seats most frequently occupied were the window seats. This should not be surprising. The seats least
Figure 19.0 Occupancy of seats during 45 trips.

- Empty 16 to 29 times.
- Empty 8 to 15 times.
- Empty 1 to 7 times.
occupied—the requisite six seats—were found both in the front and back of the bus. The middle class of occupied seats turned out to be aisle seats.

The next step seemed more difficult. How was I to fill the thirty-nine seats with kids? What I did was simply add up the seat numbers of the seats each kid sat in and divide by the number of sittings (the seat numbers are shown on Figure 19.0). For example, Karl Prinz sat in seat 45, and then in seat 45 and still again in seat 45 and so on. I added up these numbers and found the average to be, lo and behold, 40.05. Table 19.0 lists the kids by average seat number.

**TABLE 19.0**

KIDS RANKED BY AVERAGE SEAT NUMBER

<table>
<thead>
<tr>
<th>Portman</th>
<th>2.09</th>
<th>Beck</th>
<th>24.40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lenz</td>
<td>4.79</td>
<td>Giaconda</td>
<td>25.33</td>
</tr>
<tr>
<td>Bloch</td>
<td>7.85</td>
<td>Pagan</td>
<td>26.47</td>
</tr>
<tr>
<td>Lincoln</td>
<td>10.34</td>
<td>Jaeckel</td>
<td>27.00</td>
</tr>
<tr>
<td>Garrison</td>
<td>10.93</td>
<td>Gray</td>
<td>27.05</td>
</tr>
<tr>
<td>B. Brown</td>
<td>11.62</td>
<td>Watson</td>
<td>27.44</td>
</tr>
<tr>
<td>Gordon</td>
<td>12.96</td>
<td>Monroe</td>
<td>27.98</td>
</tr>
<tr>
<td>Baker</td>
<td>13.20</td>
<td>Heller</td>
<td>28.31</td>
</tr>
<tr>
<td>Mayo</td>
<td>13.58</td>
<td>Montaigne</td>
<td>28.68</td>
</tr>
<tr>
<td>Noyes</td>
<td>13.62</td>
<td>Jencks</td>
<td>29.59</td>
</tr>
<tr>
<td>G. Aiken</td>
<td>15.63</td>
<td>Palazzo</td>
<td>29.61</td>
</tr>
<tr>
<td>Hendricks</td>
<td>15.80</td>
<td>Pierce</td>
<td>30.21</td>
</tr>
<tr>
<td>Jones</td>
<td>15.82</td>
<td>Nash</td>
<td>31.69</td>
</tr>
<tr>
<td>F. Aiken</td>
<td>16.36</td>
<td>Abrams</td>
<td>32.40</td>
</tr>
<tr>
<td>Seward</td>
<td>18.18</td>
<td>Fisher</td>
<td>35.27</td>
</tr>
<tr>
<td>Eber</td>
<td>18.38</td>
<td>Johnson</td>
<td>35.60</td>
</tr>
<tr>
<td>J. Brown</td>
<td>21.92</td>
<td>Cruz</td>
<td>38.20</td>
</tr>
<tr>
<td>Needham</td>
<td>22.07</td>
<td>Casyk</td>
<td>38.71</td>
</tr>
<tr>
<td>Wood</td>
<td>23.00</td>
<td>Cummings</td>
<td>39.80</td>
</tr>
</tbody>
</table>

Prinz 40.05

It was then a simple matter to arrange the kids on the bus in this order, avoiding the six least frequently occupied seats. The bus that results is shown in Figure 19.1. It would seem that it might be possible to "idealize" this chart, that is, to make it better reflect the geographic realities of the bus behavior. For instance, George and Flora Aiken were "always" together and Flora "always" sat beside the window. In fact,
<table>
<thead>
<tr>
<th>PETER</th>
<th>COURIER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PORTMAN</td>
<td>LENZ</td>
</tr>
<tr>
<td>BLOCH</td>
<td>LINCOLN</td>
</tr>
<tr>
<td>GARRISON</td>
<td>GORDON</td>
</tr>
<tr>
<td>MAYO</td>
<td>BAKER</td>
</tr>
<tr>
<td>JONES</td>
<td>Mr. AIKEN</td>
</tr>
<tr>
<td>Miss Aiken</td>
<td>SEWARD</td>
</tr>
<tr>
<td>JANE BROWN</td>
<td>EBER</td>
</tr>
<tr>
<td>NEEDHAM</td>
<td>WOOD</td>
</tr>
<tr>
<td>GIACONDA</td>
<td>BECK</td>
</tr>
<tr>
<td>PAGAN</td>
<td>JAECKEL</td>
</tr>
<tr>
<td>WATSON</td>
<td>GRAY</td>
</tr>
<tr>
<td>MONROE</td>
<td>HELLER</td>
</tr>
<tr>
<td>JENCKS</td>
<td>MONTAIGNE</td>
</tr>
<tr>
<td>NASH</td>
<td>PALAZZO</td>
</tr>
<tr>
<td>JOHNSON</td>
<td>PIERCE</td>
</tr>
<tr>
<td>CRUZ</td>
<td>ABRAMS</td>
</tr>
<tr>
<td>CASYK</td>
<td>FISHER</td>
</tr>
<tr>
<td>NASH</td>
<td>PRINZ</td>
</tr>
</tbody>
</table>

Figure 19.1. The typical bus.
the Aikens did sit next to each other 40 times of the 44 times possible, and Flora Aiken sat next to the window on each of these occasions. But in Figure 19.1 George and Flora are separated by two kids, and Flora sits on the aisle. This is because Figure 19.1 does not show people sitting on the geographic bus, but rather on an average or typical bus. This bus, since it is an average of seating behavior, does not have windows, loudspeakers, aisles, axles, and so on, and it would be a mistake to look for them here. While the typical bus may not show Flora Aiken next to the window, it does indicate that on the four occasions when Flora was not sitting with her brother, she was sitting behind him. Thus we make a trade; social information for geographic information. Who was sitting in the same part of the bus generally speaking? Where was so-and-so sitting vis-a-vis him-and-her? Figure 19.1, on the other hand, will not tell us where so-and-so was sitting vis-a-vis a particular air-vent or the wheels. Such information would be interesting, and easy to obtain, but irrelevant for our purposes. The purest expression of this typical bus is, of course, the ranking of Table 19.0. We display it on the geographic bus for purposes of clarity and information, and, as will be seen, because it also happens to be, in some sense, the geographic bus anyhow.

Table 19.0 and Figure 19.1 are revealing, particularly in regard to the strange states of affairs of the front and back of the bus, for if the average seat numbers may be taken as representing actual seats, there is a smooth and continuous progression from seats 10 to 32. But it is only before seat 10 and after seat 32 that we find our empty seats. Let us look at the front first. Porter Portman has the amazing average seat number of 2.09! To have achieved such an average means that Porter Portman had to have spent most of his time in the front row. In fact, Porter sat only in seats 1 and 2 with a single instance of having sat elsewhere—in seat 14. Likewise, Omar Lenz had the low average seat number of 4.79; but he sat exclusively in seats 1 through 10 (albeit with considerable jumping around). Only nine other people altogether ever sat in the first row, and these sat there with remarkable infrequency. The first row of seats was, in fact, the fiefdom of Portman and Lenz, and particularly of Portman. Lenz was an unreconstructed camera buff and it was from the front of the bus that pictures could be most effectively taken. But Portman was not a camera buff and he sat in the front of the bus for other reasons. It is impossible to say with the evidence before us whether Portman sat in the front of the bus because it was empty, or whether the front of the bus was empty because Portman sat there. It is, however, positively deposed that most of the kids refused to sit there because Porter Portman sat there. It must never be forgotten that this is the kid who introduced himself with, "I'm a redneck from Mississippi and I'd have voted for Wallace in the last election if I
could." Clearly, Portman was not going out of his way to get to know others nor to encourage others to get to know him. In fact he went out of his way to put others off, making them keep their distance, and on the bus managed to surround himself with a buffer zone of empty seats.

Now let us turn our attention to the back of the bus. These empty seats provide another buffer zone, between the messy, noisy, tour-ignoring back of the bus and everything in front of it. Recall our descriptions in Part II of the back of the bus. There was the eating of food, the doing of hair, the ignoring of the courier, the irreverent conversation, the sleeping, the littering of the premises with candy bar wrappers, empty pop bottles, pistachio nut shells and cigarette butts. This part of the bus demanded separation from the rest, if only to protect the people farther up from contamination, from being drawn into the tantalizing, if messy, affairs of the back of the bus. But once again two forces are in operation: isolation of the back from the front, and protection of the front from the back. (It is hard to forget in this context that Nybia, noting Janine's presence on one occasion in the back of the bus, felt constrained to explain that Janine was feeling rebellious.)

Before attempting to define the boundaries of the three bus regions, let us look at some other information. Our initial organization of the group into mixers, fixers and rangers hypothesized that mobility on the bus would correlate with mobility in the cities. We can't test this because we know nothing about mobility in the cities of a systematic sort, but the basic argument can be recast. If a kid were interested in broadening his horizons geographically, vis-a-vis the space and cultures of Europe, he would also avail himself of the opportunity to broaden other aspects of his being at the same time. Thus someone interested in learning about Europe, would also be interested in learning about his fellows in Group L. The greatest amount of continuous time spent with Group L was on the bus. If a kid were exploratorily motivated, he would explore Group L on the bus. That is, he would sit next to as many people as possible. The most highly motivated kids would sit next to the greatest numbers of kids. These would be rangers, explorers. The least motivated kids would sit next to the smallest number of kids. These would be fixers. The mixers would fall in between. Thus we need a measure of social activity for the bus.

This was not difficult. For the most part the bus seats occur in pairs. All I had to do was see who were sitting in what pairs. This of course assumed that people sitting in pairs would communicate, and that people chose the seats they did for a reason. (As we shall see, certain pairs of kids did not communicate.) I simply ran down the Seat Chart two columns at a time, isolating such pairs as 1 and 2, 3 and 4,
5 and 6, and so on. The last row was different in that the seats were not set off as pairs but run continuously together. Thus three of these seats (42, 43, 44) enable their occupants to sit next to two kids at the same time. In this case the tallied pairs were 41 and 42, 42 and 43, 43 and 44, and 44 and 45. Obviously this means that kids in the back of the bus have an edge on social activity, but our measure only reflects the geographic reality of the seating arrangement. Kids sitting there simply had greater opportunity for social contact. I cannot imagine that they weren't aware of this, or that the incessant experience, common to all of us, of the guitar materializing in the back of the bus, the comradely singing, and so on, wasn't borne in mind. It might be noticed at this point that as contact was increased by the arrangement of seats in the back, privacy was diminished. Conversations are at least three-way back there, and more often four- and five-way. This is not the place for that intimate tete-a-tete. In Table 19.1 we have ranked the kids according to the number of different kids they sat next to. When two kids have sat next to a similar number of kids, they have then been additionally ranked by their average seat number, a higher average seat number moving them higher in the ranking. (This is because, as we have just indicated, socialization potentials increase as you move back in the bus, away from the courier, the empty seats, Porter Portman in the front, to the social last row.)

**TABLE 19.1**

**KIDS AND OTHERS RANKED BY NUMBER OF OTHERS SAT NEXT TO, AND THEN BY AVERAGE SEAT NUMBER**

<table>
<thead>
<tr>
<th>Kids</th>
<th>Seat</th>
<th>Kids</th>
<th>Seat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrams</td>
<td>18</td>
<td>32.40</td>
<td>Gordon</td>
</tr>
<tr>
<td>Heller</td>
<td>17</td>
<td>28.31</td>
<td>(Lenz)</td>
</tr>
<tr>
<td>Casyk</td>
<td>14</td>
<td>38.71</td>
<td>(Needham)</td>
</tr>
<tr>
<td>Johnson</td>
<td>14</td>
<td>35.60</td>
<td>Fisher</td>
</tr>
<tr>
<td>Montaigne</td>
<td>14</td>
<td>28.68</td>
<td>Pierce</td>
</tr>
<tr>
<td>Watson</td>
<td>14</td>
<td>27.44</td>
<td>Eber</td>
</tr>
<tr>
<td>Jencks</td>
<td>13</td>
<td>29.59</td>
<td>Noyes</td>
</tr>
<tr>
<td>Palazzo</td>
<td>12</td>
<td>29.61</td>
<td>Garrison</td>
</tr>
<tr>
<td>(Jackel)</td>
<td>12</td>
<td>27.00</td>
<td>(Bloch)</td>
</tr>
<tr>
<td>Pagan</td>
<td>12</td>
<td>26.47</td>
<td>Prinz</td>
</tr>
<tr>
<td>Jones</td>
<td>12</td>
<td>15.82</td>
<td>Cruz</td>
</tr>
<tr>
<td>Hendricks</td>
<td>12</td>
<td>15.80</td>
<td>(Wood)</td>
</tr>
<tr>
<td>B. Brown</td>
<td>12</td>
<td>11.62</td>
<td>J. Brown</td>
</tr>
<tr>
<td>Giaconda</td>
<td>11</td>
<td>25.33</td>
<td>Seward</td>
</tr>
<tr>
<td>(Beck)</td>
<td>11</td>
<td>24.40</td>
<td>(G. Aiken)</td>
</tr>
</tbody>
</table>
At a glance, it can be seen that there was a tendency for the more social kids to sit farther back on the bus than the less social kids, even discounting our second ranking measure. Thus the most active kid, David Abrams, sits in the second row from the back; the next, Heller, sits four rows from the back; the next, Casyk, in the back row; the next, Johnson, in the back row; the next four within the last four rows. On the other hand, Portman sits in the first row, and the next least active five sit in the first six rows. What can be said most generally is that active kids tend to set behind inactive kids.

This ranking has been divided into septiles and these septiles have been aggregated, two septiles comprising the most active group, three septiles the median group, and two septiles the least active group. Thus we have three groups, containing nine, thirteen and nine kids each. These groups are tentatively labeled rangers, mixers and fixers. Where are these groups sitting? Figure 19.2 shows the location of these groups according to the average seats plotted in Figure 19.1. This chart reveals two basic bus regions. In the region including the first six rows of the bus, we find the preponderance of the unsocial kids as well as six-sevenths of the adults. In the other, including the other five rows, we find all of the most social kids and only a single adult. Several things are clear: social and unsocial kids do not mix; unsocial kids sit with the adults; unsocial kids and adults sit up front; social kids do not sit with adults; social kids sit in the back. Moving through these two regions are the middle group, half of them 6/13ths) sitting in front, and half (7/13ths) in the back.

**TABLE 19.2**

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Average Seat</th>
<th>Average Seat Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>9</td>
<td>30.76</td>
<td>26.47 - 38.71</td>
</tr>
<tr>
<td>Group 2</td>
<td>13</td>
<td>23.25</td>
<td>10.34 - 39.80</td>
</tr>
<tr>
<td>Group 3</td>
<td>9</td>
<td>19.09</td>
<td>2.09 - 40.05</td>
</tr>
</tbody>
</table>
Figure 19.2. The social bus.

- The most social two septiles.
- The medianly social three septiles.
- The least social two septiles.
Confirming the obvious is Table 19.2. Clearly the social
group sits farthest back, the unsocial group farthest forward. The range
of seats is the narrowest for the social group, and widest for the unsocial
group. Certainly, it cannot be questioned that social mobility is related
to seat location. Can these locations, however, be rationalized?

Let us assume that the social group is composed of rangers. These kids have supposedly high motivation to explore, to widen horizons, to exploit environments for all they're worth. Our assumption was that such kids would be eager to exploit not only the environment of Europe, but the social environment of the tour. Is this supported by the foregoing analysis? By all means. The kids were given one preeminent opportunity for social exploration: the long bus trips between cities and "sights." At the same time, these long bus trips presented the least direct opportunity for "seeing" Europe. That is, Europe through the windows of a rapidly moving bus is the least immediate modus for the perception of the European gestalt. The exploiting, exploring ranger weighs the two opportunities—high on social environment, low on European environment—and comes to a decision. He will exploit the social environment while on the bus. But the best place to "see" Europe from the bus is in front where there are more windows, while the best place to talk is away from the T-C's and the courier. The group that opts for social exploration will want to talk, and will not care about seeing Europe from the bus. Thus the exploring group will sit in the back. The group we find sitting in the back is the most socially active group. I think that we can take it that these are the rangers, and that these kids have decided to forego Europe from the bus for the opportunity of seeing America in the flesh.

The very opposite case must be made for the fixers. These kids have very low exploratory motivation and little desire for contact, either socially or otherwise, because their beings are "fixed" on home, for example, or some other known center. Unwilling to take the chance of becoming involved with Europe, with the strange, the unknown, unwilling to risk, these fixers recognize that "seeing" Europe from the bus is the most buffered, least painful approach. They will want—to the extent that they want to see Europe at all—to see it from the bus, and the best place from which to see Europe on the bus is the front where there are more windows and where the all-knowing courier and other adults reside. On the other hand, as they are unwilling—or unable—to engage Europe, they are equally uneager to engage America as represented by the kids on the trip. In other words, they will want to put themselves in such a position as to not have to talk, or otherwise socially engage, with other kids on the bus. But because the T-C's, courier and so on inhibit talk in the front of the bus, there is least risk
of talk in the front of the bus. Thus the unsocial group will sit in the front. The group we find sitting in the front is the least socially active group. I think that we can take it that these kids are the fixers, and that these kids have decided to forgo the social realities of the tour on the bus for sensing Europe through the windows at sixty miles an hour. (Obviously, Erica Cruz and Karl Prinz would seem to constitute an exception to these conclusions. They will be dealt with below in detail.)

For the mixers we make neither the ranger nor the fixer case. The mixers have in them the exploratory drive of the ranger, tempered by the fears of involvement of the fixers. Consequently, it would be suggested that, to the extent that they were more like fixers, they would sit farther up, whereas to the extent that they were more like rangers, they would sit farther back. However, it follows from the definition of the mixer type that the most commonly employed strategy to achieve a sufficiency of exploration without engaging in excessive risk will be to form small groups, which groups will help absorb environmental shock as a group at the same time that they inhibit the formation of all-absorbing pairs. Mixers are the group that tends most to preserve the larger characteristics of Group L as a whole. However, the bus does not provide locations for the formation of small groups with the exception of the last row. Consequently, mixers will be forced to sit as pairs, pairs which provide the nuclei for small off-bus groups. Thus we should expect to find the mixers exhibiting greater pair behavior and less individualistic behavior than any other group. In this case a pair is defined as two individuals sitting together more than five times during the trip. If one person sits with a second person ten times, a third person eight times and a fourth person five times, we call the first pair a primary pair, the second pair a secondary pair, the third pair a tertiary pair, and so on. It further follows from the definition of our types that if fixers exhibit pair behavior, the pairs that form will be least threatening and demanding, least deep and intense, least characterized by mutual exploration and risk-taking, and longest lasting, since there is little reason to split (low interaction tension) and great reason to stay together (isolation from the rest of the group). Then, if rangers form pairs they will be highly threatening and demanding, deep and intense, characterized by vital mutual exploration and risk-taking, and shortest lasting, since there is great reason to split (high interaction tension) and little reason to stay together (social exploratory drive). Finally, the mixers will engage in relationships somewhere in between, toward fixer type if the mixer is low on the social interaction scale, toward ranger type if the mixer is high on the social interaction scale. For our group of adolescents, sexual relationships will be more tension-loaded than non-sexual relationships, and thus we should expect that more socially active kids will engage in sexual relationships more
readily than less socially active kids. Furthermore, we should expect that pairs will more readily be formed from the following classes than not: rangers with mixers, mixers with mixers, mixers with fixers and fixers with fixers (thus excluding the likelihood of rangers pairing with rangers, and rangers pairing with fixers). We can summarize the foregoing:

1) There will be more pairings of all sorts involving mixers.

2) Pairs will stay together longest among fixers, least long among rangers.

3) Sexual pairing will involve most rangers, fewest fixers.

4) Pairs will be least likely to form between ranger and fixer, then between ranger and ranger.

Of the foregoing suggestions, we have the ability to test three. The item about sexual pairing autocorrelates with the fact that four of the eight boys on the tour are rangers. Thus, sexual pairing in Group L is forced to involve rangers predominantly. The sexual suggestion cannot be tested in any general sense using data from Group L for this reason, and will be ignored. We will take the rest in order.

**TABLE 19.3**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Pairs per Kid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangers</td>
<td>12</td>
<td>1.33</td>
</tr>
<tr>
<td>Mixers</td>
<td>26</td>
<td>2.00</td>
</tr>
<tr>
<td>Fixers</td>
<td>10</td>
<td>1.11</td>
</tr>
</tbody>
</table>

As can be seen from Table 19.3, mixers were involved in more pairs than either other group, both absolutely and on a pairs-per-
kid basis. The figures show that, for instance, rangers were involved in only twelve pairs altogether, and that each ranger was involved in 133 pairs. These pairs may have been rangers with rangers, rangers with mixers or rangers with fixers. Table 19.3 does not discriminate. The low numbers of pairs formed by the rangers and fixers is explained by the longevity of the pairs formed. Thus the rangers, busy ranging, were unwilling to invest much time in any individual, while the fixers, "fixed" on one individual, invested all their time in single primary pairs. Tables 19.4 and 19.5 make this clear. Table 19.4 lists all the pairs in which kids sat together more than twelve times and shows the number of times these long-lasting pairs stayed together.

**TABLE 19.4**

**LONG LASTING PAIRS**

<table>
<thead>
<tr>
<th>Group</th>
<th>Pair</th>
<th>Times Together</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixer</td>
<td>Baker-Mayo</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>J. Brown-Seward</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Cruz-Prinz</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Noyes-</td>
<td></td>
</tr>
<tr>
<td>Mixer</td>
<td>Lincoln</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Fisher-Pierce</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Eber-Garrison</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Gray-Nash</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Giaconda-Monroe</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Eber-</td>
<td></td>
</tr>
<tr>
<td>Ranger</td>
<td>Pagan</td>
<td>17</td>
</tr>
</tbody>
</table>

As can be seen, among these long-lasting pairs, the fixers are the longest lasting. Also note, that although the foregoing list includes all the pairs together more than twelve times, there are no pairs sitting together thirteen to sixteen times. That is, there is a real break between the number of times long lasting pairs stay together and the number of times the balance of the pairs stay together. Furthermore, 78% of the fixers are on Table 19.4, 69% of the mixers, but only 11% of the rangers. Clearly, the fixers are clinging to one another, while the rangers are clinging to no one. This point is driven home by Table 19.5
which shows the average number of times group members remain in pairs.

**TABLE 19.5**

**LONGEVITY OF PAIRS BY GROUPS**

<table>
<thead>
<tr>
<th>Group</th>
<th>Average &quot;Life&quot; of Pairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangers</td>
<td>7.92</td>
</tr>
<tr>
<td>Mixers</td>
<td>11.63</td>
</tr>
<tr>
<td>Fixers</td>
<td>24.90</td>
</tr>
</tbody>
</table>

This simply states that a pair involving a ranger is likely to last one third the time of a pair involving a fixer, a pair involving a mixer about one half the time of a pair involving a fixer and so on. In other words, fixer pairs are long lasting, ranger pairs of shortest duration. To a substantial extent this results from the fact that fixers pair with fixers, but mixers with rangers as shown on Table 19.6.

**TABLE 19.6**

**INTRA- AND INTERGROUP PAIR BEHAVIOR**

(Numbers represent pairs)

<table>
<thead>
<tr>
<th>Rangers</th>
<th>Mixers</th>
<th>Fixers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangers</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Mixers</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Fixers</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

As can be seen, no pairs were formed between fixers and rangers. This reflects the desire of fixers to form long-lasting isolating pairs, a desire in direct conflict with the wish on the part of rangers to get to know as many people as possible. At the same time, rangers formed few pairs among themselves. This also reflects the wish of rangers to get to know as many different people as possible, since, when
one ranger may be interested in pursuing a relationship with another ranger, that ranger may be ready to move on. The most fertile mating situation is between rangers and mixers, where the exploratory drive of the ranger is matched by the exploratory drive of the mixer tempered by the mixers more "social" tendencies, and then among mixers themselves. In point of fact, mixers establish more primary pairs among themselves than between themselves and rangers, as is shown in Table 19.7.

**TABLE 19.7**

<table>
<thead>
<tr>
<th>PRIMARY INTRA- AND INTERGROUP PAIR BEHAVIOR</th>
<th>(Numbers represent pairs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangers</td>
<td>Mixers</td>
</tr>
<tr>
<td>Rangers</td>
<td>1</td>
</tr>
<tr>
<td>Mixers</td>
<td>7</td>
</tr>
<tr>
<td>Fixers</td>
<td>4</td>
</tr>
</tbody>
</table>

Since the primary-secondary distinction is a function of longevity of pairs, Table 19.7 simply shows that, while rangers do pair with mixers more frequently than any other combination, they establish predominantly secondary pair relationships with these mixers. In terms of primary pairs, it can be seen that ranger-mixer fertility is no greater than fixer-fixer fertility. (We would naturally anticipate that fixer pairs would be mainly primary from Table 19.5.)

We may summarize the foregoing as follows. Mixers are involved in more pairs than any other group. The "life" of mixer pairs is midway between that of rangers and fixers. Primary pairs form most readily among fixers, but mixers form more primary pairs. Considering all types of pairs, the most fertile combinations are rangers with mixers, then mixers with mixers, then fixers with mixers; while the least fertile combinations are fixers with rangers, rangers with rangers and mixers with mixers. Thus we may return to our contention that mixers will exhibit greater pairing tendencies than any other group. They do so. We may now refer once again to Figure 19.2 and explain why, whereas rangers sit in the back and fixers sit up front, mixers sit anywhere, half up front and half in back. They sit anywhere because the pairs they form on the bus are less important on the bus than off. This is because the pairs they form are really important as the nuclei of small off-bus
groups. Such a group might free-time tour together, sit at the same table while eating, pajama-party together, and wait together (to get on the bus in the morning, for room assignments, and what have you). On the bus such a group must split into pairs. If these pairs are interested in talking or sleeping, they will gravitate to the back. If they are more interested in reading, or looking, they will gravitate to the front. Unlike the fixers who maximize through-the-window touring on the bus, unlike the rangers who maximize social interaction on the bus, the mixers are more precisely marking time on the bus, waiting to reassemble into small groups. As mixer groups fluctuate in composition, so do mixer pairs, and it is just this fluctuation in group composition that drives the number of mixer pairs beyond the number of other group pairs. Likewise it is the importance of the mixer group that reduces the importance of the mixer pairs. Finally, it is the reduced significance of mixer pairs that allows them to sit anywhere on the bus.

We may now answer the question that prompted the foregoing investigation: what are the boundaries of the bus regions? According to our analysis there are two major bus regions, the front and the back, shown on Figure 19.2. The front is characterized as the abode of the adults and fixers, the back as the abode of the rangers. Against this view is all of Part II, where the bus was regularly trichotomized into the front, middle and back. Is it possible to reconcile these two points of view? To answer this it will be necessary to nominate criteria capable of discriminating the middle of the bus from the front or back. The most obvious of these is that the middle be dominated neither by rangers nor fixers, but rather by mixers. Less obvious is that, since the front and back are relatively homogeneous in composition, the middle be heterogeneous in composition. Finally, but critically the middle must be in the middle.

Recalling the distinctions made earlier between the social and geographic bus will help us designate the middle of the bus, for, since rows are not meaningful entities on the social bus, there is no need to respect them in dividing the social bus into its parts. If we consider the social bus as nothing more than a ranking, it becomes meaningful to consider such a portion of the bus as fifteen seats, which is a third of all available bus seats, even though such a number of seats results in awkward divisions of the geographic bus. We shall do this, designating the first fifteen seats as the front of the bus, the next fifteen as the middle and the last the back. (The relevant ranking is in Table 19.0.)
TABLE 19.8
LOCATION OF RANGERS, MIXERS AND FIXERS

<table>
<thead>
<tr>
<th>Location</th>
<th>Rangers</th>
<th>Mixers</th>
<th>Fixers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>11 people</td>
<td>8 kids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>15 people</td>
<td>10 kids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back</td>
<td>7</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>13 people</td>
<td>13 kids</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The numbers refer exclusively to the kids. Although this analysis suffers from compartmentalizing a small sample too many ways, it is still clear that 1) The front is dominated by fixers and most of the fixers are up front; 2) The middle is dominated by mixers and most of the mixers are in the middle; 3) The back is dominated by rangers and most of the rangers are in the back. Thus our first criterion for the middle of the bus is met: that it be dominated by mixers. Bounding the middle in this manner also allows us to retain the essential characteristics of the front (that it be dominated by fixers) and the back (that it be dominated by rangers). Our second criterion, that of heterogeneity, is also met. No region failing to include rangers, mixers, fixers, and adults can be considered heterogeneous. But the front of the bus includes no rangers, while the back of the bus includes no adults. Only the middle of the bus includes members of all four groups, and thus only the middle is heterogeneous. Finally our last criterion is met: the middle of the bus is most clearly in the middle.

This middle of the bus is similar to tidelands, which are neither ocean nor land, but a totally distinct entity resulting from the confluence of the two. The middle of the bus mediates between front and back and can set the tone for the entire bus, since behavior acceptable to the middle is acceptable to representatives of the four bus groups. At the same time it acts as a barrier between the authoritarian attitudes of the front and the relatively bohemian attitudes of the back. No one in the back of the bus ever knows how long the rest stop will be, no matter how many times the courier has stated it—until told by members.
of the middle of the bus. And so on. The edges of the middle of the bus fluctuate, forward and backward, and the middle of the bus expands and contracts accordion-like according to the dynamics of the group as a whole at any point in time. When Group L acts as a single group, everyone is in the middle of the bus. (The middle was probably most extensive on the trip from Innsbruck following the solidifying drug episode.) When the group is acting least like a group, the middle may vanish entirely. (On the continent greatest fragmentation may be seen on the trip into Brussels.) Thus our designation of the middle as the first fifteen seats is somewhat of an abstraction. A greater level of abstraction may be reached by designating the rows on the geographic bus in which the middle sat. These would be rows five through eight. The compensating advantage of this abstraction is the ability to discern the structure underlying the daily variations in group organization. Thus while we can see from day to day any number of changes in individual seating as well as variations in the composition and location of the sub-groups, one can still "feel" this underlying structure. That the kids talked of the bus regions and bus subcultures is indication of the palpable substance of the underlying structure. This generalized abstraction of the kids into groups and the bus into regions was, for all its instantaneous invisibility, entirely real, as much a part of the bus as the aisles and windows, loudspeakers and axles. It is in this sense that the social, typical bus, was also in fact the geographic bus. It may be valuable at this point to summarize the discussion so far.

1) Fixers. Fixers have little exploratory drive, and concomitantly little urge to exploit the social environment of the tour or the geographic realities of Europe. Fixers wish to avoid the kids on the bus, and Europe on the ground. Maximization of these tendencies forces the fixer to sit in the front of the bus, and to form very stable, nearly permanent pairs, predominantly with each other.

2) Mixers. Mixers have exploratory drive tempered by an unwillingness to become "lost," either in the social or physical environment. They wish to explore the available environments, but trust to the attributes of fluctuating small groups to buffer environmental shock and to inhibit the formation of all-absorbing pairs. On the bus these small groups break into "holding" pairs. Mixers form more pairs than fixers and explorers combined. These pairs endure neither as long as fixer pairs nor as short as
ranger pairs. Since these pairs are most important in maintaining small groups "in suspension" on the bus, they are driven neither to the front nor the back, although they can sit anywhere. However, since fixers have a vested interest in the front, and rangers in the back, mixers tend to the middle. Most mixers sit in the middle and the middle is dominated by mixers.

3) Rangers. Rangers have high exploratory drive, and concomitantly great urge to exploit the social environment on the bus and the geographic environment off the bus. Rangers want to get to know as many kids as possible on the bus. This drive reduces the tendency of rangers to form any pairs, especially with each other. Since their motivation is diametrically opposite to that of fixers, they form no pairs with fixers at all. Any pairs formed are of short duration. "Getting to know" involves talking, which behavior drives the rangers away from the front of the bus. Rangers sit in back.

These conclusions have been reached by the analysis of certain behavioral information. If these characteristics are actual attributes of the kids, and if the personalities of the kids are at all integrated, similar variations ought to show up in other forms of behavior. Other behavior about which we know a great deal is mapping behavior. The kids should be susceptible of differentiation into rangers, mixers and fixers using map derived measures. We have two of these: pseudograph measures and grid transformation measures. In the first of these the issue is connective strategy stability. In the second the concern is with the ability to reproduce the standard grid. Underlying both measures is the question of cooperation or eagerness to exploit and explore the mapping exercises.

Obviously we shall expect the rangers to make the most of the opportunity to draw maps. In the first place the mapping exercises provide another "environment" ripe for exploration and exploitation. In the second place, the mapping exercises provide a forum for the reification of geographic exploration. Thus the mapping exercises provide a chance to enhance the value of the initial exploration. Consequently the rangers will be the most frequent mappers. Exploratory drive leads to exploration which leads to exploratory competence. Thus we shall expect: 1) That the ranger will produce the greatest number of maps; 2) That they will produce the most connected maps; 3) That their
Figure 19.2 A Ranger's Map of London: Bob Watson
connective strategy will be the most stable (the practice effect); 4) That they will approximate the standard grid most closely (as a result of extensive exploration); 5) That their maps will cover the largest portion of the environment.

Fixers will be least interested in drawing maps since they will perceive the exercises as an alien "environment" in which they will not wish to become involved. Further, having only slight exploratory urge vis-a-vis the geographic environment they will have little interest in reifying such experience, which experience will also be too limited to lead to the production of maps satisfying the specified criteria (especially the one requesting maps of the city as a whole). However, when they draw maps, they will draw of them of limited, relatively dormocentric regions, thus increasing the likelihood that they will be connected. Thus we shall expect: 1) that the fixers will produce the smallest number of maps; 2) that they will produce maps that are significantly less connected than rangers; 3) that there will be scant strategic stability; 4) that they will approximate the standard grid least closely; 5) that their maps will cover the smallest portion of the environment.

We shall not state the mixer case, since it is likely that they will fall between the fixers and the rangers with one exception: they will try to cover reasonably large areas, but without the extensive exploration of the rangers. Consequently they will be unable to connect these maps up. Since the fixers are mapping more limited areas, fixers may produce more highly connected maps than the mixers, though of more circumscribed areas.

**TABLE 19.9**

<table>
<thead>
<tr>
<th>Group</th>
<th>Pseudo-</th>
<th>Pseudo-</th>
<th>Average</th>
<th>Class</th>
<th>Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>graph</td>
<td>graph</td>
<td>Number</td>
<td>per</td>
<td>per</td>
</tr>
<tr>
<td></td>
<td>Class</td>
<td>Sums</td>
<td>Appear-</td>
<td>Appearance</td>
<td>Appearance</td>
</tr>
<tr>
<td>Rangers (9)</td>
<td>70</td>
<td>18</td>
<td>2.00</td>
<td>3.89</td>
<td>7.78</td>
</tr>
<tr>
<td>Mixers (13)</td>
<td>50</td>
<td>20</td>
<td>1.53</td>
<td>2.50</td>
<td>3.85</td>
</tr>
<tr>
<td>Fixers (9)</td>
<td>25</td>
<td>9</td>
<td>1.00</td>
<td>2.78</td>
<td>2.77</td>
</tr>
</tbody>
</table>
Before considering what this table means, let me explain what it is. You will recall that there were five pseudograph classes, numbered from one to five, the fifth being the most stable class. To be considered for any class in any city you had to draw at least three maps of that city. If you did draw at least three maps of any city, you "appeared" in the pseudograph analysis for that city. The maximum number of appearances per kid would thus be three (one for each city) and the maximum number of appearances that could be achieved by any group can be obtained by multiplying the number of kids by three. Thus, the rangers appeared in the analysis 18 times out of a maximum potential of 27. The average number of appearances is derived by dividing the number of appearances by the number of kids in the group. Thus the nine rangers achieved an average of two eighteen times by appearing in the analysis. Average class per appearance is derived by dividing the class sums by the number of appearances. This is the average pseudograph class for the group. The class per kid is derived by dividing the class sums by the number of kids in the group. This score combines a cooperation weighting (by dividing by all the kids, some of whom did not map) with the average pseudograph class per group (represented by the class sum). Thus, groups in which large numbers of kids did not map, will find the average group performance pulled down. This measure can stand as a summary of the preceding measures.

The over-all appearance of the table would seem to support our contentions about the behavior of rangers, mixers and fixers. The rangers produced the greatest number of maps as measured by their number of appearances in the pseudograph analysis. Nine rangers produced almost as many maps as the thirteen mixers and far more than the same number of fixers. In per kid terms, the rangers took advantage of two out of the three potential opportunities, while the fixers took advantage of one out of three. The mixers, predictably, were right in the middle.

Rangers also produced the most connected maps as evidenced by the enormous class sum achieved, as well as by their high score in class per appearance. The average class achieved by the rangers was almost Pseudograph Class 4, implying a large number of Class 5 mappers with highly connected maps and stable approaches to the mapping problem. As anticipated, the fixers scored slightly higher than mixers on the average, when they bothered to map, though both mixers and fixers scored significantly lower than rangers. In the class per kid scores, which take into account the number of kids mapping, it can be seen that the three groups are distinct in the expected direction, though mixers are closer to fixers than anticipated. In general it can be stated that rangers were more frequent, better mappers than either other group,
Figure 19.3  A Fixer's Map of London: Porter Portman
and that mixers were more frequent mappers than fixers, though performance scores are quite similar otherwise for these two groups.

It might at this point be objected that analysis of the pseudograph scores should have proceeded along more independent lines than were pursued above. There we simply assumed the validity of the ranger, mixer, fixer trichotomy and hoped that the average group scores would be sufficiently differentiated to support our suggestions. A more independent approach would have been to graph kids according to seat scores and pseudograph scores, thus avoiding the loss of individual information entailed in averaging. To validate the approach taken above, kids were graphed according to simple number of kids sat next to (undifferentiated according to average seat number—the raw portion of Table 19.1) and individual pseudograph class sums (the rawest pseudograph measure). Analysis of the resultant graph revealed the existence of four—not three—groups. One group, with low social activity and low pseudograph scores, contained ten kids, nine of them fixers. The next group contained eleven kids, all mixers as defined above. The third group contained nine kids, eight of them rangers. The fourth group was occupied only by David Abrams, achiever of the highest pseudograph sum and the highest social activity score. Except for the constriction of the mixer group, the results achieved by dividing the social activity scores controlled by average seat number into septiles and then aggregating them, prove to parallel the above graph analysis. David Abrams may be special, but he is simply a special ranger. Without going further I think it important to state that such independent analyses will support our division of the kids into fixers, mixers and rangers generally, although there will likely be local movements around the edges of the sub-groups. This affirms the contention that all our measured behaviors are nothing but refractions of the underlying personality structure of the individual kids.

**TABLE 19.10**

**GRID TRANSFORMATION BEHAVIOR OF THE RANGERS, MIXERS AND FIXERS**

<table>
<thead>
<tr>
<th>Group</th>
<th>Grid Transformation Class Sums</th>
<th>Average Class per Group Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranger</td>
<td>19.3</td>
<td>2.14</td>
</tr>
<tr>
<td>Mixer</td>
<td>26.0</td>
<td>2.00</td>
</tr>
<tr>
<td>Fixer</td>
<td>15.6</td>
<td>1.73</td>
</tr>
</tbody>
</table>
Figure 19.4 A Mixer's Map of London: Susan Lincoln
You will recall that each map was sorted into one of four classes based on its approximation of the standard grid. Numbered one through four, the lowest numbered class contained the worst approximations of the grid, while the highest contained the best. All of a kid's maps were averaged to give him his grid transformation score. These scores have been summed for the groups and appear above as class sums. This sum has been divided by the number of kids in the group to achieve a group average. The variation among the above scores is not as great as was the case for the pseudograph measures, thus bearing out our earlier contention that there was meager correlation between the pseudograph analysis and the grid transformation analysis. Nonetheless, the trend is in the right direction so as to allow me to say that rangers approximate the standard grid better than mixers and mixers better than fixers. Thus we have now differentiated the kids into three groups along the following dimensions: 1) social activity; 2) bus location; 3) pair behavior; 4) map exercise exploitation; 5) connectivity of mapped parts; 6) ability to reproduce the standard grid. I have no hesitation in saying that as far as group measures are concerned, that we have shown that mapping behavior is related to bus behavior, and that hence it is very likely that these two distinctive forms of behavior spring from a common source; namely, the personality of the kids.

However, as the eminent statistician L.C. Tippett points out, "Statistics is essentially totalitarian because it is not concerned with individual values of even the few characters measured, but only with classes" (in Newman, 1956, 1479). In gaining some appreciation of the more general aspects of the connections between the maps and other forms of behavior, and in gaining some view of the overall structure underlying the composition of the group, we have ruthlessly sacrificed truth to actual living breathing people. I wish to illustrate this by discussing the particular cases of Erica Cruz and Karl Prinz, not only because they are the fixers sitting in the back of the bus, but also because in them are encapsulated many examples of the individual characteristics of others. You see, Erica and Karl fell in love.

I would have said that Karl was an excellent example of a fixer. In London he seemed to be much of a loner, not even closely attached to his fellow Milwaukean and ex-school mate, Sven Heller. In the way he regarded the mapping, I felt that he was acting like Porter Portman, who felt that our simplistic approach to mapping was beneath his dignity as an expert in U.S. Army mapping techniques. In a similar fashion, Karl bandied about his supposed expertise, gained, reportedly, in the Boy Scouts. Both of them initially refused to draw maps for these reasons, though both produced less than respectable products when finally cajoled into trying. Karl's was probably the worst
we collected in toto. Also, like Porter, Karl buried himself on the bus, only in Karl's case it was the very back corner that seemed most secure. In fact, in the early part of the trip, when most of the kids were still relative strangers overall, his back seat did provide him with a strong defensive position. It was only when the rangers asserted their right to the back of the bus (on hitting the continent) that his isolation was jeopardized, and even then the seat next to him was more often empty than not. In fact, Karl was the Porter Portman of the back.

Meanwhile, Erica was acting extremely ranger-like. Prior to meeting Karl, Erica had sat with five different kids. Had she maintained this pace of social activity, she would have emerged at the top of the social activity rankings, and in fact had almost paired with Vittoria Palazzo (sitting with her five times—Karl never got this close to anyone but Erica). If not a high class stable mapper, she was an eager mapper, drawing three maps of London, while pursuing her steady course of decreasing fragmentation. On several occasions she proved to be gregarious and independent. All in all, as we left London, I had put her down as a promising ranger.

Like every other boy, Karl sat next to a girl on the gondola ride in Venice, and like the rest of them sat next to her on the return to Venice the next morning. (This was the time Portman abandoned the front row, moving back to seat 14 to sit with Nybia Pagan.) Unlike any of the rest, Karl sat next to Erica on twenty-four of the following thirty-two trips. In the same span of time, no other boy-girl pair was together nearly as often. Karl and Erica sat together in the back of the bus, where Karl had always sat (Erica had sat there sixteen of the preceding twenty trips). It is quite easy to rationalize their behavior in terms of our foregoing paradigm, to see them as fixers. Karl was a fixer, exploiting the relative strangerliness of the group and the strong defensive position of the back of the bus (under those conditions) to isolate himself from the rest, and failing to exploit the possibilities of the mapping exercises in true fixer fashion. Whether Erica was also a fixer, a fixer whose search for someone to cling to led her to examine a large number of kids initially and who in the fullness of time would have found such a person, is something we shall never know, knowing only that she did find someone to cling to and that, though she drew us many maps, drew maps of a low connective class which scarcely approximated the reference grid at all. A less negative interpretation of her relationship with Karl that, not clinging, she was opting to explore, to range deep within a single person instead of across many, would throw further confusion around any assessment of her behavior. But this is all after the fact, for as I have indicated there, in Europe, I saw Erica as a ranger and Karl as a blank.
When, on the trip into Rome, I discussed the maps of each kid with him, I discussed the maps with Karl and Erica together, for they were together, allowing them to compare and contrast their maps not only with mine and Group K's, but also with each other's, and, as one might have supposed, Karl deprecate his product and praised Erica's while she struggled valiantly to find something nice to say about his. Karl could not be blinded to the fact that Erica was at least trying to draw maps, and trying hard, while he had failed to try at all. As a result, Erica repeated in Rome her performance in London, while Karl exceeded most of the kids and drew us three well-connected maps that reproduced the standard grid with incredible fidelity. There may have been, in the end, something to that Boy Scout story, for as far as the maps were concerned, Karl had in a single bound leaped to the front of the class, so that now it might have appeared that Erica were more the fixer than Karl, whose light, we could now see, had simply been hidden in a barrel. Then, when the chance came to cross the Rubicon of the Play in Rome, Erica and Karl crossed gladly it would seem, with vigor and suggestions, the only fixers to do so, just as they were the only fixers to sit in the back of the bus, so that, on leaving Rome, they had all the badges that rangers could wear, except for Erica's low map scores, and even there, Erica was one of the three kids to manifest a transcendent mapping stability by behaving in Rome as in London.

Had they moved to the front of the bus at this point they would have found themselves among angry fixers incapable of accepting the fact that they had participated in the Play, as well as hostile T-C's who would have regarded them, if not absolutely disloyal, at least and probably more insultingly, seriously misguided. Instead they remained in the back of the bus, among the overtly disloyal, among the Play's authors, where sympathy, if not for the devil then at least for the unannointed, reigned supreme. They relaxed. Karl, under the pressure of having to share the window seat with Erica, as well as the general high demand for the back row among the recently disenfranchised, began to sit next to different kids. He talked, probably more about himself than was entirely comfortable, but nonetheless interacted with strange kids, and one might have said, looking over his soul, that he was coming out. Always somewhat serious, Karl and Erica, in their sympathy for outcasts like themselves, were able to find themselves in company with the group's pariahs, Nybia and Janine for continuing to run the project against the express will of the authorities, and Mrs. Needham, for sanctioning such behavior. The five of them comprised in those sad sunny days a group at once mature and purposeful, relaxed and invigorating. By the end, Karl and Erica had all the taint of Rangers that David Abrams had, and maybe even more, for in the end they transcended the group in
their togetherness, Karl crossing the winter wastes of America to visit Erica in New York, the one participant in the reunion to have exerted most, to have moved farthest, to reassert his love. I can see fixers clinging to one another across an aisle or even a crowded room, but across America? More and more Erica and Karl appear less and less to be fixers, than rangers, enthralled in the only really serious business in life.

But this variation between Karl and Erica—people—and Karl and Erica—fixers—need cause no dismay. There is no tendency here to cause me to upbraid myself, to cast to the winds the carefully constructed, amply supported dissection of Group L into fixers, mixers and rangers, for this dissection was never really intended to "explain" individuals, but rather groups, and to the extent that groups are ipso facto totalitarian entities, so too our measures of them, our metaphors for them, our knowledge from then, will be totalitarian as well. It can, perhaps, be suggested that totalitarianism is not the attribute of only certain, self-articulate, overtly organized groups, but of all groups whatsoever their tenets of organization, for all groups, out of whatsoever collectivity of consciences, expresses a group will—no mystical notion—that manifests itself in behavior, in seat choices, in including and excluding, in pairing, in card-playing and sleeping and eating, in sitting silent staring. But such individual behavior is group behavior only taken together, and taking together destroys the individual behavior, warps it, distorts it, not maliciously, nor necessarily intentionally, but by its very nature. Looking at groups, we fail to see the people that make it up, just as a view of the ocean obscures the individual characteristics of all the little drops that make it up. We make a choice—not irrevocable—to look at aggregates or individuals, and depending on which we choose we see what we see. When we look at Karl or Erica we see something of Karl and Erica, but when we look at Group L we see only something of Group L, measures of central tendency, and ranges around that middle. Were each member of Group L to match in himself the characteristics of the group at large, we would have, not a group, but a monolith. In the end, we relax in the knowledge that Erica is Erica, Karl is Karl, and Group L is Group L.

II

There has been no time in which to perform a detailed analysis of the post-trip maps, and indeed they are still continuing to come in. However, it will be worthwhile to view a few. Some comments of a highly speculative nature might also be essayed.

Figures 19.5 through 19.10 are remembered maps of London. Each map blank that was sent out was accompanied by the List of Places
Figure 19.5 Joy Gray's Remembered Map of London

- Oxford Street
- Tower of London
- Parliament
- Westminster Abbey
- Tower Bridge
- Piccadilly Circus
- Buckingham Palace
- Thames River
- St. Paul's Church
- Kings Cross Station
- University of London
- Russell Square
Vittoria Palazzo’s Remembered Map of London

Figure 19.6

ST PANCAS
HUGHES PARRY HALL
?
DISTANCE
POT

MADAME
TAUSAUDS

WESTMINSTER ABBEY
BIGBen

PARLIAMENT

THAMES RIVER

LONDON TOWER
VICTORIA EM

FLEET STR.
GREENWICH

WATERLOO

Memo: I can’t remember the distance
Figure 19.7 Leslie Casyk's Remembered Map of London
Figure 19.8  David Abrams' Remembered Map of London
Figure 19.9 Phyllis Gordon's Remembered Map of London
Figure 19.10  Janine Eber's Remembered Map of London
for London, along with an adjective checklist and a bus seating chart. The order of presentation was bus seating chart first, then adjective checklist and finally the map. The intention was to get the kids back into London in their memories before having them draw the maps. Unaided by the grid analysis and other techniques, I think you can still get the picture. Basically the kids are still hitting the ball in the same ballpark. There has been no drastic attrition of places, no significant deterioration of relative location. David Abrams was capable of practically reproducing his original third London map and Janine Eber's is her best map of all. In my excitement over David's map I called him up and asked him about its production. He said that once he got going it only took him fifteen minutes to complete the map. This surprised him considerably because it had always taken him longer to draw the map while in London. He also felt it was otherwise more painless than it had been working in London.

The suggestion that temporal distance from the subject made cognition of the subject easier was not borne out by Janine, although she is contradicted by her map. The map is her most integrated, most detailed drawing of London. However, she writes:

"First I went through the list to check off points I knew the location of. Now I draw the map. It occurred to me that Oxford Street ran into Euston, right? Or it comes close, so I don't know how to draw it. I never could get the stuff by the river right! This is a terrible map—I feel like I'm just putting down places. I'm not sure of most of them.

Just looked at a map of London to see how I did and yuck! It's horrible. Of course, I never did know where the Tower of London, Westminster, and Oxford and Regent Streets were...!

With her comments in mind, look at Figure 19.10. She did not connect either Oxford or Regent Streets with Euston. Obviously she simply felt too unsure to go ahead with her plan. She here articulates a confusion noted during the grid analysis between Regent and Oxford Street, even drawing "Is this Oxford Street?" on what is really Regent Street. She, like so many others, understood that there was a relationship between these streets, but was unable to ever get it straight. This is the sort of information on the remembered maps: articulation, crystallization of the major problems in the cognition of the visited cities. Notice that Janine has also moved Westminster and the Tower of London back together. The same old p-cliff, although she has now left London Bridge behind.
In the second mailed installment we had the kids draw maps of Innsbruck—hitherto unmapped—and Venice, but without a list of place names. David Abrams' remembered map of Innsbruck is shown in Figure 19.11. While a few kids were able to produce such maps of Innsbruck, most were entirely fragmented and showed little detail, as might be expected on a first map generally. The detail that was shown included predominantly those places visited on the sightseeing tour of Innsbruck with the addition of the parks along the River Inn where so much socializing took place. Vittoria Palazzo was alone in labeling the Inn River the "Blue Danube." Janine Eber's maps of Innsbruck and Venice comprise Figures 19.12 and 19.13. A glance at these shows that the process Janine started in Rome has continued. She is becoming increasingly involved with the project instead of less so, and has clearly become a Ranger. This begins to establish another characteristic of the Ranger-Mixer-Fixer trichotomy, that a Ranger will push his exploratory drive into realms of memory as well as into the social fabric and physical structure of existence. Janine writes:

Here's my running commentary on the checklists, maps and bus charts so you'll know what I'm going through(!):
First of all I sat and thought about Innsbruck. We never did maps on the city—don't remember doing a checklist either. (We did, DW)

We came in from the north—down that big mountain—saw several danger signs, a car avec a trailer which didn't make it, then to the hotel—built in 1452 or 1453 or some year like that. It just occurred to me that because I didn't go all the way up the mountain I didn't remember Port's escapade, but only heard about it. But I do remember the hassle about the drugs (Scene I of "Was It Fate" or "The History of Group L"—a play in five acts....).

Anyway, back to the city. I remember the park where my group had a picnic and a water-fight (I was not drunk!!!); going up the mountain by cable car and train; the Inn River; the walk back from the mountain trip avec Sven, Betty, Claire, Susan, Nybia (? -no I guess not), Vanessa—maybe Erica and Karl. I'm not sure. We stopped at a covered bridge (remember that?)—Hey, that's the bridge that Cliff, Vanessa and I had to cross to be with the rest of "our group" and go to another park...
Figure 19.11  David Abrams' Remembered Map of Innsbruck
Figure 19.12 Janine Eber's Remembered Map of Innsbruck
Janine goes on to describe in minute detail for several pages her memories
of Innsbruck. There can be little question but that the trip to Europe was
and is still continuing, nor can there be much question about the role
played by our incessant map assignments. These continue to play the
educational role they had played all along, providing now an opportunity to
systematically recall and reorganize and reify previous experience. In
common with most of the kids, Janine liked the Alpine experiences best of
all and goes into raptures about the mountains. Then she describes in
detail the composition of her map.

It's strange—I remember only being able to see the whole
valley from the north side (when we went up by cable car)
and only the village from the ski jump. Therefore, I had
to draw the River first, holding the paper south to north
(upside down) then turn it right side up to do the rest of it.

Just decided to do most of the map upside down, 'cos we
always went south (across river) to shop, sightsee
et cetera.

Oh no! I have to start all over again. I don't have room
east of what I put on the map already for more stuff.
Besides, turning it rightside up and positioning myself
and the map... Ugh!

Hope it's okay if I just add the rest on another sheet
instead of drawing the whole thing smaller.

Well, I guess I'd better make the whole thing smaller and
cancel the added sheet idea.

Oh yes, the school where we had those horrendous lectures—
except for the one on music—Hey! Those were the ones
where Odin fell asleep. Now, boy, I wish you were here
to answer my questions. Do you want me to turn all the
names around to make them right side up?? This has
already taken me 45 minutes and I haven't started the
overlays yet.

Okay, just so you know: read numbers 1 through 26
holding the map with north toward you and 26 through
35 with north away from you. As you know, I never
did the maps exactly as you instructed, I find it hard
to decide on a central point. The hotel is the center
of my activity, yet not the center of town. Oh, I see it's to be the center of town. Well, in Innsbruck I don't recall a center, we just went out and in all over.

This is ridiculous. I can't put vista symbols all over the map, but pretend that they are. See the list on the tracing paper for general statements referring to the whole map.

Okay. Map done. Took me 1 hour total.

Then Janine goes through the entire process all over for the next phase of the trip. The Venice map only took her fifteen minutes to draw. She says "Venice makes me feel very sad."

Janine's running commentary on the creation of these maps may easily be the most valuable single piece of information gathered by the project. She manages to attack nearly every issue involved in sketch mapping explicitly and articulately. The question of orientation is clearly dealt with, confusion resulting from having to add different perspectives together into a synthetic whole. She addresses herself to the issue of what center to use, her own center or some consensual center. She draws a clear picture of the problem of false starts and the problems of scale. And she shows by her effort the role affection has in the creation of mental maps.

The next mailing that went out included a second map request for Venice. This time we included a list of place names. We wanted some way of independently assessing the role of the list on kids within the same group. Figures 19.14 and 19.15 show such maps of Venice. There was a marked increase in detail from the listless map to the listed map, and a corresponding increase in primitive veridicality. Janine pinpointed a real problem causing variation in the images of London, Rome and Paris. She notes that names in London stuck with her better; that names in Rome slipped between her fingers because she didn't know the language at all; that her years of school French were a great help in Paris. She points out that this is especially true of streets, since the names of most monuments are well-known in English. She writes of this last exercise;

I know these maps have declined since the last ones. When I saw these I said: "Oh, no! I can't do a map of Venice and Rome! But I did, anyway. They're terrible. I can see in my mind everything, but there are no labels on my memory!"
Figure 19.13  Janine Eber's Remembered Map of Venice (without list of places)
Figure 19.14  Desmond Jencks' Remembered Map of Venice (without list of places)
Figure 19.15  Vittoria Palazzo's Remembered Map of Venice
(with list of places)
Figure 19.16  Janine Eber's Overlay of Second Remembered Map of Venice (with list of places)
Rome may be completely turned upside down. I don't know. I think I have a mental block against Rome. I could hardly find adjectives for it.

As for the bus seating charts - well. All I know for sure is that George Aiken sat on the aisle seat (to buffer the world from Flora?) and I sat with Vanessa, at least until Nyb and I got together (to collect the charts).

As evidence of Janine's "decline" I exhibit Figure 19.16, showing her overlay for Venice. It is the most remarkable overlay in our possession, characterized by a freedom and degree of relaxation in the use of the symbols not previously encountered. How do you think Janine felt about Venice?

The final figures (19.17 and 19.18) shown are Bob Watson's and David Abrams' of Rome. These can be compared with earlier examples of Rome maps for these two individuals.

To conclude on the basis of this whirl through an ongoing project may seem presumptuous, but anyhow:

1) Memory is fading but very slowly, and each exercise brings it all back.

2) Distance in time results in:
   a) Loss in detail for some kids, tentatively identified as not Rangers.
   b) Increase in connectivity and ease of creation for kids identified tentatively as Rangers.

3) The developmental tracks taken during the trip in regard to mapping strategies are continuing to be followed.

4) The trip is in fact continuing.

III

To connect all this with the pre-departure maps would seem to be in order. This is not the case. The kids had never seen us when they
first received the materials announcing the trip and were awed by the title of Doctor assigned to Bob. Under these circumstances, the kids that did the exercises followed the rules of Environmental A to the letter. Thus, for instance, Erica Cruz gives us in pre-departure a totally connected map of Brooklyn. But she never connected anything up again. This same applies for most of the kids in pre-departure. Consequently, they do not shine through as individuals to the extent necessary to make predictions. Furthermore, they drew the predeparture maps not only of well-known environments—that is beside the point—but from the security of home. On the trip this security disappeared. As Bob pointed out so perfectly in the first chapter, we were basically dealing with tour personalities, which may in fact bear strong internal relationships to home personalities, but whose connections are not well-known. There is no question that the materials gathered before departure bear strong resemblances to the subsequently gathered materials and that they enable us to flesh out the picture of mapping strategies and approaches and attitudes and values in general, but they do not comprise the necessary data from which to make predictions within the framework of the maps. Perhaps the analysis of other data would enable us to make these links.

But no such predictions will be essayed on the basis of the maps alone. In this connection it should be borne in mind that the primary (originally the only) role the pre-departure exercises were to play was educational. In this they succeeded brilliantly as the whole outcome has shown,
CHAPTER 20

"I don't want to, but I will."

...TAYLOR NASH
—passing in the hall
The most popular school of detective fiction terminates its stories in a highly predictable way. The detective-hero gathers into his presence all of the suspected characters and verbally traces a history of the reasoning that led him to certain highly incriminating conclusions. As his review progresses, each of the suspected characters is singled out in turn, and our worst suspicions are confirmed. He was, after all, the killer. But no, the detective goes on, he was a mere red herring. And so we turn to examine the evidence against another suspect. One by one all eliminated until...The denoument is obvious. The darbies are produced, but, just in the nick of time, the culprit swallows a vial of cyanide and so ends a pernicious and useless existence.

The detective, both in reality and in fiction, has certain advantages over the practitioner of social science, for rare indeed is the case wherein the scientist is presented with a veritable corpse and instructed to find the perpetrator of the crime. Rather is the scientist in the position of having to discover, not the criminal, but the body itself. It is an immensely more difficult task, for the body is unrecognizable as such, and the first job of the scientist is to establish the criteria for its recognition. Consequently, in the final review of the quintessence of this report, we find ourselves in the position, not of the detective, but rather of the coroner, and seek only to demonstrate that a crime has in fact been isolated. I am the coroner, and you are the coroner's jury. The verdict is up to you.

I call witnesses.

I

The Introduction: Time, space and matter were examined as concepts and found wanting. In their place was substituted the single concept of event, and its relations or intervals. These intervals could be broken down into dimensions of space and time, but the process of breaking the intervals down was shown to be a matter of convenience and nothing else. It was likewise shown that the aggregation of events into series of events was a matter of convenience, and nothing else. Drawing on these facts a definition of geography was proposed wherein the field of geography was seen to be a matter of convenience of labeling, and nothing more. In a nutshell, geography was seen to be defined as that area of interest to those who call themselves geographers. Psychogeography was then defined as the area of interest that encompassed the perception of geographic things, the cognition of these things, and the behavioral consequences of these cognitions. Psychogeography deals with these processes as parts of an organic and interrelated whole.
II

Part I. The first part of the report proper consisted of four chapters, sketching the history of the conception and birth of the project, ostensibly psychogeographic in character.

Chapter 1. This chapter drew a picture of the conception of the project. The nature of the population under investigation, a group of kids on a summer tour to Europe, was suggested. Certain characteristics of the behavior of this group of kids were postulated in an attempt to acquire criteria for the design of investigative schedules. There emerged three dimensions that could be investigated. The first of these was developmental and dictated that the time of the investigation be broken into three parts: pre-departure, trip, and post-trip. In each of these "temporal slices" it was determined to investigate the social character of the group, and three "social characters" were postulated: Rangers, Mixers and Fixers. Each of these types would be examined in regard to the perception, cognition, and consequential behavior vis-a-vis; the social environment, the cultural environment and the spatial environment. The final slice would form the burden of this report. That is, this report would deal predominantly with the perception, cognition and consequent behavior of the kids, sorted as to social type, in regard to the spatial environment.

Thus at this point we hypothesized that Rangers, Mixers, and Fixers would exhibit variations in the perception, cognition and consequent behavior vis-a-vis the spatial environment through the three "time slices" noted. Our primary tool for this investigation would consist of the collection of sketch maps generated by the kids through time.

Chapter 2. Here was presented a review of the role of maps in similar past investigations. All maps were seen as being mental images of the world that varied solely along the dimension of consensuality. This led to the discussion of three classes of maps: 1) the most consensual, or standard map; 2) a smaller group consensual image useful to an isolated community or elicited by experimental techniques such as those employed by Peter Gould and others; 3) an image consensual only to the individual, generally stored in the mind, or elicited by techniques such as those employed by Kevin Lynch. Analysis of these images and the uses to which they had been put enabled us to conclude; that instructionless free-hand sketch mapping produced a product practically useless for the investigation of anything; that we would have to come up with a new approach; and that this approach would have to include enormous educational inputs. The consequences of this were examined and it was concluded that such input would not significantly interfere with
the goals of the study in a deleterious manner, and that such inputs would have a salutary effect on the investigator-respondent relationship, resulting in exchange, rather than theft.

Chapter 3. The newly designed approach, Environmental A, was presented in its entirety.

Chapter 4. If Chapter 1 described the conception of the project, and Chapters 2 and 3 described a period of gestation, this chapter described the birth proper. We saw here that the instruction schedules had succeeded in their task, and garnered a windfall of other information. It was further shown that Environmental A did in fact constitute a graphic language of no little flexibility and sophistication, sufficient to allow the mappers to communicate a variety of information to the map reader, and with feeling. In essence, the bulk of what was to come to be Group L was talking with maps prior to the commencement of the trip to Europe.

III

Part II. The second part of the report was the description of the trip itself and consisted of eight chapters. These were included for a variety of reasons set out in passim in Part II, as well as to make clear the nature of the geographic environment, in Auchin’s terms, in which the sketch maps were collected.

Chapter 5. This consisted of a selection of extracts relevant to the subject of travel, and were included to provide a base of resonance against which the trip could vibrate.

Chapter 6. Of particular import in this chapter was the description of the naivete under which we labored in designing the project. This naivete was immediately dispelled in the first contact with part of Group L and was seen to die a fluctuating death, being alternately revived and then skewered mercilessly by fate and eventuality. Chapter 6 saw us settled in London.

Chapter 7. Here we examined in illuminating detail the experiences of a single day, our first full day in London. The consequences of this day were felt throughout the remainder of the tour, and continue to be felt, both in respect to the ultimate nature of the project and Group L, and in respect to the ability of Group L to grasp the space of London.

Chapter 8. We continued the story of the trip, watching the
vacillations in the investigator's mind as to the course of action to be followed, and their resolution with the collection of the first set of sketch maps in London. The particular form of this resolution was to have continuing reverberations throughout the balance of the trip.

Chapter 9. In this chapter the kids are increasingly exposed to light as Group L begins to resolve itself from a mass into individuals. At the same time we make it to the end of our stay in Innsbruck, closing with a lengthy description of an episode that induced solidarity in Group L.

Chapter 10. The thread of the narration is picked up on the morning of our departure from Florence. Omitted, for reasons of length, is any description of our stay in Venice and Florence. At this point, however, we describe in great detail the progress of another single day, typical of the days on the bus, and vital in setting the stage for the Roman events that follow. Short vignettes shed further light on individual kids. This is followed by a description of the events leading to the disappearance from Group L of yours truly, and a split in the ranks of the kids in Group L generally.

Chapter 11. This chapter is narrated by three people. The first portion, which describes the events that transpired in Rome following my departure is narrated by me. The following portion which sees the group move from Rome to Paris via Lucerne, and ultimately back to the States is narrated by two of the kids; Janine Eber and Nybia Pagan. At this time they became associate investigators, running the project without substantial assistance.

Chapter 12. The trip itself is over but continues on in the mind of the tourists. Described are the webs of correspondence that grew up among the kids and ourselves which led to a Group L reunion in New York in December of that year.

IV

Part III of the report likewise consisted of eight chapters, of which this is the last. This part was concerned with analyzing the data collected in Part II, and with establishing connections between that data and the flesh-and-blood realities that it stands for.

Chapter 13. The difficulties of making any connections between data and transpired event are examined. The argument draws heavily on the basis of understanding built in the Introduction and concludes that there is no connection between the events of the trip and the data in hand that can be bridged by anything but faith. The argument concludes with a plea
for the end to the quasi-traditional separation of poetry and science, and uses this plea as yet further justification for the inclusion of Parts II and III in a single report. Other aspects of the data in hand are considered, particularly the maps which are shown to contain an inherent temporal dimension. This argument is based on the fact that the maps are a trace event, and as such are ipso facto capable of disaggregation into a temporal and spatial dimension on a basis of convenience. This assumption of the temporal nature of maps pervades the following chapters of analysis without specific reference.

Chapter 14. A content analysis of the sketch maps is essayed and completed with the following conclusions:

a) That instructionless sketch mapping has a great likelihood of producing highly incomparable, highly domocentric images of a given environment;

b) That on this basis it is necessary to disregard conclusions reached by prior students in the same area of investigation that have employed the instructionless mapping techniques.

c) That an instructional mapping technique such as Environmental A has great payoff for the instructed, making social science investigators more humane than heretofor, by virtue of the fact that in giving, the correspondent gains in return.

d) That there is a genetic sequence to the creation of sketch maps and that this sequence is probably at the root of spatial cognition itself, specifically that:

1) Point phenomena are perceived and cognized most readily,

2) Linear phenomena are next perceived and cognized, and finally,

3) Areas are perceived and cognized.

e) That the implementation of this genetic sequence in a quantifiable model is possible.
f) That Environmental A was likely successful because it anticipated (on spurious grounds) this genetic sequence.

Chapter 15. Chapter 15 introduced a new tool into the academic kit, called the pseudograph analysis. The function of this technique was to investigate within a developmental scheme the varieties of strategies employed by those drawing sequential sketch maps, and by extension the cognition of space itself. Among the conclusions reached were:

a) That the attempt to describe types, styles or strategies of either sketch mapping or spatial cognition on the basis of single sketch maps, with or without additional information, ignores the developmental character of spatial cognition and hence is incapable of coming to acceptable conclusions.

b) That the attempt to describe types, styles or strategies of either sketch mapping or spatial cognition on the basis of single sketch maps or experiments, ignores the effects of momentary stress and strain on the respondent and hence is incapable of coming to acceptable conclusions.

c) That strategies of sketch mapping can be described with an adequate selection of data; extensive, collected through time, collected in a variety of environments and supported by massive amounts of additional information.

d) That these strategies may be considered as a function of the degree of integration of the map surface, and may include the following five types:

1) A steady decrease through time in the degree of integration,

2) A steady increase through time in the degree of integration,

3) Increases followed by decreases through time in the amount of integration,
4) Decreases followed by increases through time in the amount of integration,

5) No change through time in the amount of integration.

e) That a stable mapping strategy is characterized by great integration, generally, and that unstable strategies are characterized by significantly less integration.

f) That mapping strategies are integrated within the entire individual personality structure of a person, and relate consistently to that structure.

Chapter 16. This chapter also introduced the use of a graphic analysis technique new to the investigation of sketch maps. This involved the display of graphic compilations of isolated portions of the sketch maps. Among the conclusions reached were the following:

a) That there is an increase in the degree of consensuality among individual maps through time for a given environment along the dimensions of size, shape, scale, bearing and relative location.

b) More tentatively, that there is the greatest increase in consensuality and the greatest incipient consensuality for those aspects of the environment most frequently experienced in common.

c) That consensuality of experience is closely related to cognitive consensuality.

d) That consensuality of size, shape, scale, bearing and location parallel the growth in consensuality of the sketch map and cognitive content.

Chapter 17. This chapter marks the first publication of another technique for the analysis of sketch maps, the grid transformation. It was argued that the application of this technique required the acceptance of two assumptions, those of surficial continuity and of navigational sufficiency. The analysis proceeded using the language of
professional cartography in regard to projections (to a very limited extent), and the language of geomorphology in regard to the characteristics of surfaces generally. It was concluded:

a) That analysis of the grid transformations, using techniques common to professional cartographers, would be fruitful.

b) That such work could lead to the creation of "mental base maps" desirable for the display of such results as accrue from the content analysis.

c) That the geomorphic language could be employed with great profit.

d) That the legibility of environments can be readily assessed using this technique; and that Paris was more legible than either Rome or London.

e) That there was no reason to suspect that a cognitive projective system resembled a cartographic projective system.

Chapter 18. Here we briefly examined the nature of the areal and symbolic overlays of the maps. Among the conclusions were these:

a) That the size of areas discriminated grew through time for a given environment.

b) That the total size of the areas discriminated grew through time.

c) That the number of areas discriminated grew through time.

d) That the attributive symbols of Environmental A were more popular than other symbols, and that the use of this class of symbol increased steadily through time across all environments, and that these symbols could be characterized as positive, negative and neutral in descriptive character.

e) That using attributive symbols values could be assigned to individual maps and individual areas.
f) That the value assigned to the largest area on a given map was the same as the value of the map as a whole.

g) That environments could be evaluated by aggregating the individual map valences and that Paris was the environment most admired.

h) That space is not considered abstractly but as part of a more general attitudinal set; that spatial cognition must be studied within the context of preferences; and that work not so conducted must be regarded with grave suspicion.

Chapter 19. Here linkages were established between sociometric information gleaned from the bus seating charts and map behavior. Some further remarks were essayed concerning the nature of the post-trip maps and their relations to the maps collected prior to departure and during the trip. It was concluded:

a) That social activity could be assessed by examining the number of kids sat next to on the bus.

b) That social activity implied particularized pairing behavior.

c) That social activity and pairing behavior could be used to define bus regions and types of kids.

d) That these preceding measures were related to mapping behavior, both in regard to performance and degree of cooperation with the project.

e) That socially active kids sitting in the back of the bus drew stable connected maps that reproduced the reference grid and were rangers; that socially inactive kids sat in the front of the bus and drew few poorly connected maps that did not reproduce the reference grid and were fixers; that mixers sat in the middle of the bus and otherwise fell between the rangers and fixers.

f) That the aggregate nature of the analysis obscured individual behavior patterns.
g) That the trip continues in the minds of the kids.

h) That temporal distance from the remembered environments produced:

1) A decline in detail and cognitive organization among kids tentatively identified as fixers and mixers.

2) An increase in detail and cognitive organization among kids tentatively identified as rangers.

i) That no valid comparison could be made between the predeparture maps and subsequent maps due to the nature of the circumstances under which the predeparture maps had been produced; that their essential role had been fulfilled in teaching Environmental A.

Chapter 20. This chapter included a summary of the results and conclusions of the previous chapters on the basis of which the following additional conclusions were reached.

a) That the bulk of previous work accomplished using the sketch map as all or part of the bases for any conclusions regarding the nature of the environment mapped, the nature of the cognition of space, or the nature of sketch mapping, while sometimes inspired and occasionally interesting, must be largely discounted, but that:

1) This does not necessarily invalidate such conclusions, which may be true despite the fact that they could not be drawn from the data as stated, and that,

2) Nonetheless, most of such conclusions are contradicted by the results of this study where comparable.

b) That discussions of cognition of space are futile without consideration of the complex nature of the cognized environment; and that discussions of the nature of a cognized environment are futile without consideration of the complex nature of the cognition
of space; and that neither are meaningful without concomitant consideration of beliefs, values, attitudes, preferences and other subjective assessments.

c) That a highly directed instructional mapping language such as Environmental A is a necessary and powerful tool in such investigations; that a still more valuable mapping language such as Environmental B can be developed; that the use of similar mapping languages has enormous educational potential in the field.

d) That the map is a viable communication channel, specifically that differences between environments and individuals can be assessed using the map as a communication channel.

e) That there is a regular sequence to the acquisition of geographic knowledge, that the orientation toward and cognition of complex urban environments proceeds along identifiable genetic lines that vary according to personal cognitive styles.

f) That social science investigations can prove mutually beneficial to the investigator and subject, immediately via the investigative schedules, and subsequently through feedback from the investigators to subjects; that such relationships can help vindicate the scientist's social role in a short-term view; that the subjects can themselves participate with the investigator; and that the subjects can supplant the investigator to the ultimate humanization of the social sciences.

g) That the subject can have the first, last and most comprehensive word on the subject of the investigation itself, specifically that:

I DIDN'T WANT TO, BUT I DID.
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