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Ground to Stand on: Some Notes on Kids' Dirt Play

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The background quality of the geomorphic landscape little encourages it as a subject for children's attention. Geomorphic features appeared in fewer than 8% of a large sample of children's drawings; geomorphic features were referred to less than 11% of the time in 500 hours of sandbox play. Because of this (relatively) transparent quality, earth takes on a great variety of roles in sandbox play, playing food more often than anything else (vanilla, salt, vinegar, cake, and meatballs, for example). Dirt play is dominated by young children who distinguish three forms of earth: sand, dirt, and mud. Older kids find little room for things-of-action in the sandbox, and the earth's surface is an even less compelling subject for them than it is for younger children.

Keywords: sandbox, dirt play, mud play, hills, play, sand

INTRODUCTION

Earthquakes must be extremely disconcerting, if only because we take the ground we stand on so much for granted. It's always there, but it's always . . . *in the background, underfoot, off at the horizon.* When kids draw, it's people they put up front – standing in front of their homes or shooting each other – people and their cars and their planes and their trains and their horses. In drawing after drawing, kids discriminate the subtlest nuances of clothing and hairstyle, limn every shell casing and Marvel muscle group; but rarely do they articulate the landscape. It's just there, something to stand on. Conning a couple of thousand sketch maps for signs of landform relief, I found that less than 8% gave any indication of hills or valleys, mountains or plains.[1] The same thing is true when kids play. In sandbox after sandbox it's food that's in the foreground, food and home and war and trucks and cars. Kids construct cakes and forts with high fidelity; but rarely do they model the landscape. In five hundred hours of watching kids play in backyard sandlots, parks and playgrounds, my students and I saw explicit construction of geomorphic landscape features less than 11% of the time.[2]

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My feeling is that this is about right. The earth is there, but it's not something actively involved with our lives. I get little sense from adults of the landscape as a dynamic process, of stream systems as mediators between rain and rock, of soil as the link between earth and life. Certainly none of this is part of our children's formal education. What adults do know – the basis for their participation in decisions about highway location and dam construction, about wetlands protection and the siting of toxic waste dumps – comes from their informal education, at work and play (which, because it is embedded in the adult world, shares adult concerns).[3] Twenty years ago I thought a good way to begin to learn about what people knew about the landscape would be to collect kids' drawings and watch them play. The studies of the drawings are currently in print, but the mudplay observations, though widely cited, have never been published. What follows is what I learned by watching kids play in the dirt, splash in the water, and mess in the mud.

WHO, WHAT, WHERE, WHEN AND HOW

I did most of the work in the summer of 1975 in the backyards of a block in one of the older residential neighborhoods in Raleigh, North Carolina. The details were complicated because

that summer we moved from one house on the block to another, but in both cases neighborhood kids – often accompanied by their parents – played in the backyard where I habitually sat, read or wrote. We also had a son, then eighteen months, who frequently played in the backyard. My wife or I or the two of us together were always with him. I was, in other words, as much a part of the setting in which I observed as were the sandbox, the trees, the kids and their parents. Substitution of a stenographic notepad for my book or clipboard went unnoticed, not only by the kids, but by the adults. In sum, it was as natural a situation for observation as could have been devised. Similarly natural were my frequent appearances in the backyards of neighbors, with or without my child, wife and dog, but always with notebook, and always eager to record what was going on in their sandboxes and dirt piles.

Additional observations were made in other settings. On habitual afternoon walks with my dog I observed children from other neighborhoods play in two nearby parks, in one of which a stream passed next to a large earth dump being worked into a road embankment. My presence in these settings was as normal as it was on my own block. I also had opportunities to observe kids in the playground of a local day care center where adult attendance was just as matter of fact. A number of my students also observed in this setting. For convenience these three settings will be called Backyards, Parks and, Playgrounds. Nearly five hundred hours of observation were logged in the three settings taken together.

The kids were between ten months and thirteen years old. In the Backyards they ranged from ten months to six years, in the Parks from seven to thirteen years, and in the Playground from three to five years. Boys and girls were equally represented. Black and white kids played together in all three settings although blacks were a distinct minority in the Backyards, an overwhelming majority in the Parks, and accounted for a little less than half the kids in the Playground. Represented by their children was a range of socioeconomic classes: welfare recipients, employed blue and white collar workers, graduate students and young professionals. They had lived in the South as little as a year and as long as a lifetime. The kids were probably pretty typical of a broad cross-section of American kids but no generality is claimed for the behaviors observed: too few kids (about fifty in total) were observed over too short a period (about ten months altogether) in only one environment (Raleigh, North Carolina).

To the extent possible I recorded facial expressions, tones of voice, gestures, words, and larger sequences of actions. But, unable to claim freedom from my own culture, doubtless I missed much of what was going on simply because I took it for granted. And I am sure a great deal of what went on also escaped me – along with its significance – because I was present neither during interludes between dirt play nor at all dirt play: when many long term affairs were ironed out among the kids; when they began, unfolded or finished off given ideas or schemes; and when they formed into groups other than those I saw. Observing a single setting is like tasting soup when it's raw vegetables on a kitchen table: you're never sure whence they came or where they're bound. But with these caveats . . .

THE SOCIAL SITUATION

As far as play went there was little differentiation among the kids by age or sex in the Parks or Playground. Boys and girls, three- and five-year-olds, seven- and thirteen-year-olds, all did much the same things when it came to throwing mudballs or playing with the teeter-totter. What went on in the Parks was not what went on in the Playground, but within each setting there was a sensible homogeneity. While some kids were more forward, some more shy, some stronger, some weaker, some dominant and some not, there was little observable stratification when it came to play.

This was not the case in the Backyards where kids fell into two groups: those who could both walk and talk, and those who couldn't. Those who could I call Big Kids; those who couldn't, Little Kids. The oldest Big Kid was six years old, not because I chose to exclude older kids, but because no kid over six played in the Backyards. The youngest Big Kid had just turned two. Little Kids were between ten and twenty-six or -seven months old. Little and Big Kids differed not only in their ability to walk and talk, but also in their play; and Little Kids were invariably attended or closely watched by adults who gave Big Kids (even two year old Big Kids) rein to roam

throughout the block or beyond. Big Kids were consequently often observed in the absence of other adults, while Little Kids were always observed in their presence; but because Little and Big Kids played in the same settings better than half the time those settings were observed, ample opportunity was given to watch Big Kids play in the presence of parents or other adults. Little difference was observed in their behavior under these variant conditions.

Most parents were highly tolerant, intervening in play only when bodies were threatened. Thus they stopped kids of any age from eating nearly anything, but especially sand, dirt or mud; and they forcefully prevented kids from throwing sand and rocks at each other, citing concern for eyes. With these exceptions parents did not intervene in play, unless called upon by the kids (to settle disputes, hold something, admire something), or unless prompted by temporary feelings of animosity or affection toward a particular child. For example, if a child had been complaining all day, and continued ''whining'' in the sandbox, its parent might intervene in a spat where it ordinarily would not, admonishing the child to ''stop complaining''. Some parents were more prone to this than others, and while clearly a function of the parent's personality, it also seemed to vary with factors like the weather. For the most part I cannot say that the presence of parents markedly affected play although certain things were taboo in their presence (especially talk of sex and religion); with respect to which my presence, howsoever natural, also served as a (weaker) inhibitor.

BIG KID – LITTLE KID PLAY

Big Kids and Little Kids played in the same setting, often just inches apart, but seldom together. Four exceptions to this rule accounted for a tenth of the time the two groups simultaneously occupied a setting. The most frequent violation of the non-playing-together rule accounted for the least time and can be best illustrated by example. A six-year-old was filling a flower pot with sand, regularly hitting the sand with the back of a spoon to, as far as I could tell, pack the sand tighter and create a smooth surface on which to pile the next handful of sand. A two year old sitting nearby was attracted by the spoon slapping: his face lighted with smiles and giggles whenever the Big Kid slapped the sand. The Big Kid, attracted by the giggles, and recognizing the Little Kid's interest, slapped the sand with increased vigor while intently watching the Little Kid's expressions. After a while he called everyone to watch the Little Kid's expressions while he slapped the sand. Some did and some didn't and finally the Big Kid switched his own attention back to his mainstream activity, turning away from the Little Kid. The Little Kid kept his eye on the Big Kid for a while, but soon developed a new interest. Such interactions were glints illuminating the play irregularly like sunshine on a cloudy day: they suddenly materialized, came to a brief focus, and faded out of existence.

The other exceptions occurred less frequently, but since they involved elaborate scenarios occupied much more time. On occasion a Big Kid arrived at a setting to find it empty. Most often he sat down and began to play alone, but sometimes he left to search for playmates. Failing to raise any other Big Kids he would call on a Little Kid and ask its parent if it could come out to play. There is a certain facetiousness in this gesture – the Big Kid doesn't expect to be taken seriously and is calling on the parent as much as on the Little Kid – along with a certain selfishness; but at the same time a genuine interest in the Little Kid is a motivation. On those rare occasions when Little Kids were let out to play, the Big Kids took them seriously and interacted with them positively, much as described above.

A somewhat similar violation of the not-playing-together rule occurred when two Big Kids reached an impasse in an attempt to come to a decision about what to do next. Though most often this led to a fight ending with one kid running off, it sometimes took another form. In this case one of the Big Kids adopted a Little Kid as an interested party in the decision and, speaking for the Little Kid – who could have cared less – attempted to carry the decision on the basis of superior numbers. Whether the gambit worked or not, the Little Kid would thereafter be included in the play of the Big Kid who had spoken for him or her until either lost interest.

The final exception arose whenever Big Kids needed Little Kids to play roles that the Big Kids preferred not to fill, such as playing ''baby'' in a game of house; ''prisoner'' in games of war, cowboys and Indians, and cops and robbers; or ''dead person'' in burial games. This last was

Two boys, aged one year 9 months and three years 10 months, play in the mud. In the background is the crab-apple tree under which the boy and girl played "cake". (Photo by Jadsson Hill).

seldom played in the direct presence of parents, although sometimes a Little Kid was "put to bed" in a pile of sand while mothers and fathers sat on the edge of the sandbox. Little Kids were also "fed" sand or dirt in various forms, although this was invariably stopped by parents. Sometimes Little Kids merely served as referents in fantasies. In this case the Little Kid was not actively involved with the Big Kids, but was simply pointed or verbally referred to.

These forms of Little Kid–Big Kid interaction were not uniform for all Big Kids. Some of the youngest Big Kids (violently walking and talking two and three year olds for instance), who usually played with kids their own developmental age or older (as many as three and four years older), sometimes played with Little Kids. In these instances they played the same games and did the same things as Little Kids and in fact "rebecame" Little Kids themselves. This was also true of really big Big Kids who for whatever reason did not get on smoothly with other Big Kids. But it should be stressed that most play for everyone was quite individual, kids joining together in the articulation of a fantasy or to complete a brief task, then splitting up to individually carry out subparts of the fantasy or task, often becoming "lost" in the performance of this subpart, and so drifting farther and farther from one another, then coming back together as a group, redefining the fantasy or task, working together briefly, splitting up again, maybe into subgroups of one and two, or two and two, these splitting up into individuals, later to coalesce, and so on, very much like the grains of sand with which they played.

LITTLE KID DIRT PLAY

Most of the Little Kids could neither walk nor talk, though during the observation period two of them progressed from slithering to crawling and one progressed from crawling to walking. They were placed in the sandbox or grass or dirt by a parent and most of them stayed where they were put. These youngest children sat in the sand and patted it constantly or moved their fingers through it, putting their hands out as far as they would reach, then drawing their spread fingers

Photo: Roger Hart.

back toward themselves through the sand. They picked up sand and dropped it. Commonly they lifted handfuls of sand or dirt above their heads and shook them, causing sand and dirt to fly everywhere, or else they let it dribble through their fingers slowly back onto the ground. Sometimes they dropped the sand on themselves, an event regularly followed by a vigorous palming of their thighs or legs as if greatly excited. (I use ''palming'' to mean the placing of the palm – open – on a surface as in patting, but with great deliberation.) If placed near a puddle or pan of water they splashed it with their hands. Then they made the same splashing gesture on the wet sand or earth. On occasion they picked up handfuls of loose but wet dirt or sand and squeezed it into a wad; then, opening the fingers and holding the palm vertically, they watched the wad come free of the hand and fall to the ground. The youngest children sometimes shook dirt or sand from their hands using the gestures of an adult trying to get rid of a piece of sticking plaster or flypaper. All of these actions were repeated again and again with unflagging interest.

One ten-monther who crawled vigorously on other surfaces would not move in the sand, apparently unwilling to crawl on the shifting surface, but most of the crawlers, when they moved at all, treated the sand almost as if it were grass or a floor. Five children under a year did not, when given containers, fill them with sand or dirt, but played with them as they did on a floor. Two older children – thirteen and fourteen months – did, however, put sand into containers, but they did not fill these containers up, pat them hard, or unmold the sand. They did pat the sand hard in local areas of the sandbox, but I can't say how much this differed from the ubiquitous patting of whatever surface they happened to be sitting on. (It may have begun as plain patting and turned into sand patting and so proceeded interactively but I can't say.) All the Little Kids put sand, dirt and anything else they could lay their hands on into their mouths. When it was sand or dirt they put into their mouths, their parents intervened instantly, with the admonition, ''You mustn't eat sand,'' delivered while cleaning out the offended mouth. Most parents tried to keep other things – toy soldiers, leaves, twigs, plastic bottles, spoons – out of their kids' mouths, but were much less vigilant and active in these cases. This repertoire of actions and gestures accounts for better than two thirds of those observed among the Little Kids. The kids did many other things, of course, but serendipitously, as something came within their reach or lay across their path, or, more broadly, played on the sand exactly as they played on the kitchen floor. The gestures and actions described above – common to all the Little Kids and of frequent occurrence – were the basic ones that took place in sand and dirt play but not in other settings.

I might mention that the Big Kids did all of the things the Little Kids did, but as incidental parts of elaborately sequenced scenarios, in the interstices between them, while watching other activities or in moments of reverie. For instance, a six year old, observing a mother and child talking, apparently almost unconsciously packs the wet dirt between his legs into wads which he then drops, rewads, drops, rewads; a five year old hits the surface of a broad pan of water with the flat of a spoon going, ''Wahoo! Wahoo! Wahoo! ''; a four year old, watching another child, runs her hand through the dry sand, occasionally lifting some, only to let it sift back between her fingers; ostensibly absentmindedly a five year old puts a plastic soldier into his mouth. It might be incidentally noted that their parents engaged in similar actions and that I found the sand sifting through my fingers more frequently than, as a diligent observer, I care to mention.

TRANSITION FROM LITTLE KID TO BIG KID DIRT PLAY

There is probably some transition between the sort of play I have just described and the sort of play, typical of Big Kids, that I am about to describe, but I didn't observe it (nor do I have any

Photo: Roger Hart.

idea what character it would take). There was a real distinction between the simple repetitive pattings and drippings and liftings of sand and dirt and the elaborate scenarios enacted by the Big Kids. A clue to the character of the transition came from watching two kids, one, walking and talking with vigor and élan but just two years old, the other just over five. Circumstances threw them together constantly, and rarely was one seen without the other. The following scenario took place early one morning in their backyard in a dirt space edged with grass (I was on my back porch next door with my breakfast coffee):

> M and G had just arisen and were outside waiting for breakfast. G, age two, was fully clothed, but M, age five, wore only a pair of jockey shorts. M said, "We're going to play STEAK!" M picked up an old refrigerator shelf and placed it on the grass and surrounded it with old bricks, clearly simulating a grill. M said "Charcoal" several times. Picking up some pieces of broken slate from an old roof, M said, "These are the steaks." He puts them on the grill. G takes one off, but M puts it back on. "Now we need some chocolate milk," said M. Finding an old can, M used it to carry water out from the kitchen. While he was gone, G moved the steaks around on the grill. Having returned, M scraped a shallow hole in the dirt with a piece of slate. He said several times, "Now we're going to have some chocolate milk." M poured the water into the hole and then put the dirt from the hole into the water. G watches. The water disappears, and M tries again to make chocolate milk. And again, G seems fascinated. After the third attempt I shouted over, "Where'd the water go?" M replied, "Into the dirt." M turned to the grill and moved the slates around. He said, "It's the glue for the dirt," and then almost instantly added, "It's a swimming pool and this is the stream," at which point he dribbled the rest of his water into the hole. He seemed to be talking to neither G nor me, but rather describing the on-goings to himself. G starts mounding up dirt near the hole. M shouts, "Its meatballs and spaghetti," and suddenly starts wadding up the damp dirt. Then he says, "It's mudballs and peppers." M and G were both called in for breakfast.
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> Five minutes later M erupts from the house. "G is still eating," he tells me. M now filled the can with dirt and out of it wadded dirtballs which he placed on the grill. "These are the meatballs," he says in a sing-song voice, "and this is the spaghetti," as he shakes the remnants of damp dirt over the dirtballs and slates. M begins looking intently around, until, spotting some dry yellowish clay dirt at hand he says, "This is salt." He sprinkles the salt on the grill. He then picks up some loose dark dirt and, sprinkling it over the grill says, "And this is the pepper." G now comes out with a truck. M says, "G, come eat your steak and spaghetti," and gives him a slate with a dirtball on it. G takes the "food," puts it down on the ground, and starts running the truck on the dirt. M says, "Give me the truck and I'll give you the bulldozer." This he has just picked out of a bush. G says, "Okay." M pulls a stick through the old swimming-hole/chocolate-milk-hole saying,

Photo: Roger Hart.

> "This is a road." Both M and G move their vehicles along the line thus made. M mounds up dirt beside the line, draws another line perpendicular to the first through the mound and says, "This is a railroad crossing." G says, "Yes," and then, "Good." M lays the stick along the second line saying, "This is a train." G says, "Good," as he pushes his bulldozer into the grass.

The two-year-old, during most of this, was really quite passive. The five year old did nearly all of the talking, and consequently the bulk of the designating, and so directed the course of the activity. The two year old participated, however, when and how he felt like it, and his putting aside the steak and peppers was quite typical. However, two days later I watched the two year old play "steaks" by himself, and saw parts of the game materialize nearly two weeks after that when the two year old played with a three year old girl.[4] I suggest that a very important part in the transition from Little Kid to Big Kid play is the result of the Little Kid's *playing along with* a Big Kid, imitating both the *forms* and *contents* of Big Kid *play,* internalizing them, and then doing them himself or with other Little Kids. What happens is not just internally generated learning, or the creation of a forum for the interactive acquisition of language and motor skills, or even mimicry of adult behavior, but critically . . . *the imitation of play itself.* The play of Big Kids and the adult world beyond the child *both* provide models for the play behavior of younger children.

BIG KID DIRT PLAY

The Big Kid described in the scenario above was very much a Big Kid and his Steak Game was very much a Big Kid's game. Big Kid play was structured around a goal or activity of some sort (making a meal) that required any number of substeps to reach or carry out. These caused scenarios to last anywhere from several minutes to several days. Many times projects that were incomplete at the end of one day were picked up the next, or the next but one or two. Products were of inestimable importance to Big Kids: piles of dirt had to be made and get larger and larger; holes had to be dug and get deeper and deeper; tunnels had to be constructed and get longer and longer and have entrances as well as exits. These products were usually measured exclusively as magnitudes, though on occasion form was also invoked, particularly when one kid had an obviously smaller mound. "It might be smaller," it could be said, "but it's nicer." During the long

trek toward the goal, or in the carrying out of the activity, a thousand subgestures and subscenarios were developed and exhausted; and often the larger structure or goal was changed in the process. Sometimes the original goal was lost for a day, only to be resurrected on the next, either out of the logic of the new play goal, or because the new goal proved futile, "dumb," or incapable of sustaining play for sufficiently long periods of time. Sometimes a given goal was reached, the product destroyed, and the goal reinstituted several times in a single day or on a number of days in succession.

Such goals or games were not easy for the kids to define and a lot of time was spent working them out. During these periods play took place that resembled Little Kid play, except that the patting and sifting were replaced by making cakes or "piles." An example of this follows. A boy, five years and eleven months, is playing with a girl just four years old. They are playing under a crab apple tree surrounded by a shallow layer of sandy loam, which is itself bounded on one side by a lawn and on the other by a dark humus-rich clay. The entire episode lasts seven minutes. She is making a cake by filling a circular cake pan with sand. He had been working on the construction of a mound, but has just left this task to fill a discarded dry mustard container (with shake *and* pour caps) with sand:

> B(oy): "I'm filling this can with icing for the cake." He fills the can with sand and shakes some out. G(irl) continues to fill the pan with sand. B skips around shaking out sand. "It's fairy dust. You'll fly away, J." This is said with great vigor. G ignores him. The pour cap on the can opens and the sand rushes out of the can. The B says, "Look! It's vinegar."
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> B returns to his mound with the mustard can. G: "This feels like wet sand." She has filled the pan and is now piling sand from a pile a couple of inches deep onto the flat surface of the cake-pan sand. B: "I'm making a trashcan." He has begun to put sand into a flower pot. "Look," he says, "the dirt makes this thing stand up." A neighbor dog wanders over and sits in the sand. G: "Look, Micis is sitting in the dirt." She sounds very upset by this. Then, "R, help me turn my cake over!" She starts to lift it. Without a word B comes to help.
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> B turns cake pan over for G. The cake slops out without straight sides or a flat top. G: "That's no good. The sides have to be straight." She starts adding sand to the cake pile. B returns to his mound where he commences to pile on the sand. G picks up cake pan and presses it onto her "cake mound." She takes the pan off carefully. The sides are straighter and the top is smooth. G: "Abracadabra, it's done." After a minute of looking and patting, she adds, "It's a devil's cake . . . give me some . . ."
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> B is patting his mound and looks up. G pats her cake. She looks up. "Give me some chocolate," she says pointing to the mustard shaker. B stands up and walks to the dark dirt surrounding the sand pile. "I'll have to make it chocolate," he says. "You don't want vanilla." G watches while he adds black dirt to the shaker. "You want some chocolate?" he asks walking toward her cake. G nods. He shakes some on her cake, then on his mound.
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> G, pointing to his mound, says, "That's not a cake." She just sits after this, picking up, throwing down, picking up, throwing down sand. B is digging dirt for his mound. Doing so he uncovers a red cloth ribbon buried in the sand. He pulls the ribbon out and starts ladling sand over it with a spoon. B: "I want that ribbon covered so it won't move . . . We've covered him up. He's dead. We covered his feet and his stomach." G asks: "Where's his stomach?" B: "Here" patting, not the ribbon, but his mound.
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> G looks at mound and ribbon for a second and then says: "This is vanilla. I want chocolate. Give me the chocolate." B: "It's hidden. You have to find it." (It is hidden, but I missed his hiding it. It turns out, ten minutes later, to have been hidden in a crotch of the tree.)

This was typical of play prior to the definition of a major goal, organizing activity, or game. Although the cake-making theme predominated, it wasn't powerful enough to keep the boy from working on cake-unrelated tasks: his own mound, the discovery of fairy dust and vinegar, the trashcan, the ribbon and the hiding of the mustard can. But it *was* powerful enough to organize almost all of the girl's activities – the

exceptions being her pawing of the dirt and her momentary interest in the ribbon – and *many* of the boy's. This fumbling for a game ended for these two kids about ten minutes later when the boy's mound was designated a house and a game around this theme ensued.[5]

All themes do the same thing: they serve to establish a frame of reference for transforming dirt into something with a functional role in the world beyond the sandbox.[6] This enriches and complicates the activities that can be carried out in the sandbox. The frame specifies the range of reference the dirt can assume. Within the frame of reference established by the steak game, for instance, black dirt became pepper; while within that established by the cake game it became chocolate. To begin with, dirt could take on *any* function but once it had been established as chocolate the range of things that could be done with it became tightly circumscribed. In this case it could only be put on a cake. When the boy started shaking it on his mound, the girl was moved to say: ''That's not a cake.'' And when he ignored her, she fretted.

She fretted, however, not because he had violated a critical principle of play, but because the shaking of the chocolate onto his mound, tantamount to a denial of the chocolateness of the dirt, was a denial of the organizing power over *his* play of *her* cake theme. This suggests that while all themes serve the same purpose, they do not do so with equal authority. In well articulated play, themes are hierarchically organized. A main theme, or game, establishes the largest frame of reference for play by determining a set of potential subthemes, each of which in turn structures a set of routines which focus still more particulate actions and gestures. For example, in the house game that developed out of the last episode, the main theme determined ''house building,'' ''cooking,'' and ''baby'' subthemes. The boy carried out the ''house building'' subtheme by working on his mound; the girl developed the ''cooking'' subtheme by making cakes, pies and other food; together they resurrected the ribbon to be a baby whom they fed, and put to bed. Within a given subtheme like cooking, cake-making, as opposed to pie-making, constitutes a routine. Such a routine may have subroutines like ''cake,'' ''icing,'' and so on, each of which determines an actual set of actions. The cake subroutine specifies a circular mound of dirt with smooth vertical sides and a flat top achieved through a particular set of physical acts: patting the mound flat, molding a cake in a pan, and so on. The routines are practically set pieces, the staple fare of the play theater. They may be aggregated around or into different main themes, and may be achieved in different ways, but they are the regularly recurring structures mediating between fantasy and physical activity, between motor and mind. In play with a main theme, these routines were integrated, reinforcing each other to some end; but in play without a main theme they tended to contradict or destroy each other, terminating in boredom, fights, or individual play. Or, of course, in the establishment of a new main theme. Almost any theme could be made a main theme, by fiat, although its success depended on its ability to sustain rich and varied play. When themes could not carry this burden easily they were labeled ''dumb'' and abandoned as games, although retained as components lower in the hierarchy.

I do not wish to give the impression that these structures were rigid. They weren't. Although at any given moment they could be invoked to castigate a kid's actions or bring him back into line, as a rule . . . they were open forms. A first theme might be stated, played out for a while, then submerged as a second theme was stated . . . only to resurface twenty minutes later, sometimes modified, sometimes not. A main theme might be subordinated to a super-main theme, or a subtheme might rise from its subordinate position to assume control of the game as a whole. But this thematic fluidity pales in comparison with the extraordinary lability of reference associated with sand and dirt at the lowest levels. Within *any* thematic structure, the sand or dirt could assume a zillion fleeting characters. In the last episode we saw a superlative example when we watched the boy shaking the sand out of his mustard can. The flying sand without giving up its longer term character as icing, became suddenly ''fairy dust'' that could make the girl fly away, and then, as the pour lid snapped open and the sand ran out in a stream, just as suddenly became vinegar. These rapid instantaneous transformations fluttered through the play like hummingbirds through honeysuckle, only occasionally pausing to enter into larger play structures. In the episode described, the sand and dirt took on the following characters: cake, icing, fairy dust, vinegar, wet sand, cake, devil's cake, chocolate, vanilla, and

stomach; while also performing the following functions: holding up the flower pot, turning the pot into a trashcan, burying the ribbon, and being mounded. In the seven minutes immediately following, it additionally became a mud cake (with water), a turtle, a dead turtle, rain, and a city, while providing the matrix for the creation of a hole and tunnel. Werner, among others, regards this sort of referential lability as characteristic of the child's thought process in general;[7] and so, while there is nothing terribly startling about these continuous transformations of sand and dirt both within and without the continuously evolving thematic structures, there is, at least to my mind, something interesting about the nature of the themes unfolded.

WHAT SAND AND DIRT EMBODIED

In three samples of five consecutive hours each of Backyard Play, in each five hour period the average number of things embodied was 88, of which a third were food.[8] For example, one collection netted: hot peppers, salt, pepper, ketchup, scrambled eggs, hot-dogs, pies, cupcakes, mud-patties, apple cake, apples, soup, mud cake, vanilla, chocolate, stew barbecue, French fries, mashed potatoes, vinegar, butter, food, cake, corn, raisin bran, raisins and milk. In comparison with food, the same collection generated only six non-food house-related items (trash, doorway, house, house dirt, soap and bed), only nine things that would fall into my category of cultural landscape features (tunnel, house, city, castle, Indian fort, burial grounds, swimming pool, road, and railroad), only six things cosmico-religious in nature (heaven, hell, world, angel, things of god's, and things of the devil), and a paltry seven geomorphic or geomorphic-related things (hole, hill, hole with a ridge, lake, river, stream and mountain). Taken together with the food, these items account for 70% of the things represented by dirt and sand during one five hour period.[9] What sticks out is the overwhelming role of food in dirt play. I would like to suggest that this is not only because of the fundamental importance for the child of eating, nor because young children spend so much time in the kitchen with their mothers, but because it is also in the kitchen that the most miraculous transformations of things take place: in the kitchen mothers transform stuff into food, and in the sandbox the child not only mimics the food itself, but the process of bringing it into being out of things not evidently edible.[10]

Only five geomorphic features showed up regularly in play: mountains, hills, streams, rivers and lakes, with occasional appearances of ridges, canyons, ponds, islands and ravines. These were things designated as such, piles of dirt or holes in the ground explicitly called ''lakes'' or ''mountains;'' as differentiated from both holes or piles named ''house,'' ''door,'' or ''hamburger,'' and undesignated holes or piles. None of the geomorphic features was terribly important in play, nor did any of them exist for extended periods. They came and went. Particularly transient were water features. Lakes, rivers and streams existed just as long as they held water and not a second more. For example, the five year eleven month old boy poured water into a hole and said: ''I made a lake.'' No sooner had the water disappeared than he announced: ''I found something that can be a turtle . . . our dead turtle. Want it to be?'' ''Okay,'' said the girl. ''What is it?'' The boy pointed to the ex-lake. Another boy had been watering the sand, ''to make the grass grow.'' The water came out of the bottle in a stream that moved on the surface of the sand before disappearing. ''It's a river!'' the boy shouted. Increasing the volume of water, he shouted even more excitedly, ''It's a big river.'' When the water was depleted he went to fill the bottle, and never again referred to the river. Hills and mountains, though not quite as transient, never stayed around for much play. One boy was making dirt piles. After he had three of them he said, ''These are the hills.'' After patting them he added, ''No! These are mountains.'' He then added some more dirt, but after patting this into place announced: ''This is a fort.'' The three piles remained a fort for the rest of that day and much of the next. A few times mountains materialized over tunnels. The tunnel was created first, the dirt excavated being piled above it and patted tightly into place to secure the tunnel's roof. After the tunnel was built it was said: ''The tunnel goes under the mountain. See the tunnel under the mountain?'' Hills were usually related to car play. A number of kids moved cars around in the sand describing outloud what they were doing. One said, ''Now the car is going over the hill,'' as he pushed the car up a mound. Such remarks typify the way in which hills entered play. In general, hills and mountains were infrequently made or played with, always consisted of mounds of dirt

that could not be morphologically distinguished, and were usually – readily, easily – transformed into cultural features; while lakes, rivers and streams had utterly transient existences, were always associated with water, and were not so much transformed as allowed to evaporate quietly from the play as the water sank into the ground.

THE NATURE OF SAND, DIRT AND MUD

On another level, however, a great deal was being learned about the properties of sand and dirt . . . as such. The kids had three common names for the substances they played with. ''Sand'' was reserved for sand so dry that its constituent particles were readily discriminated, that sprayed everywhere when thrown, that did not adhere to skin or clothing but could be brushed off, and that would not hold a shape given it by a child. ''Mud'' referred to both sand and clays mixed with so much water that the constituent particles were either suspended or lost in soggy clumps that dripped and splashed when thrown, that smeared on clothes and skin and did not come off, and that could no more hold a shape than ''sand.'' ''Dirt'' was used for either sand or clay or some mixture of the two sufficiently damp to hold a shape but not so wet as to lose it. ''Dirt'' was also, but less often, used to denote all other non-sand, non-mud soil and soil-related stuff such as humus or leaves in advanced states of decay. As different as these substances are, they have a trait or two in common.

All three substances are fluid. That is, they consist of particles that can move easily and change location with respect to one another without causing a separation of the mass as a whole. While I don't want to suggest that the kids had a term for fluidity, they recognized it, at least as evidenced by their behavior, for not only were there common behaviors with respect to sand, mud and dirt, but with respect to leaf piles, snow and water as well. For example, several kids were observed making angels in the sand by lying on their backs and sweeping their arms and legs out laterally to create impressions of wings and skirts. I have also seen the same kids make angels in the fallen leaves and in the snow. During a snow shower, the same kids molded the snow into balls and other shapes, exactly as they molded ''dirt.'' Similarly, the common dirt-play practice of dragging a stick through a mound and calling the result a road was observed in Backyard leaf piles during the fall. Snow, sand, dirt, mud, leaves and water are all put into containers, and shaken or poured out. Sometimes this identity was made explicit:

> Boy (5:2) fills a flower pot with sand and shakes it out through the hole in the bottom saying, ''Look, I'm making it raining.'' Immediately afterwards he fills the flower pot with water and watches the water dribble from the hole.
>
> Boy (4:6) fills a liquid detergent bottle with sand, ladling it in a little at a time. He is still doing this eleven minutes later. Finally, eight minutes later still, he stops and begins to shake the dirt out of the bottle. ''It's soap,'' he shouts. Then, ''It's water.'' He is having some difficulty getting the sand to come out and he tries many different ways of shaking the bottle. Finally, he begins to shake it so that the sand spurts out. After a while he drops the bottle.

Episodes like this last one occurred several times a day and indicate an awareness of the similarity of sand and water as fluids at least in the context established by a bottle.

But if all three substances are fluid, they are not all plastic. Again, I am not claiming that the kids explicitly recognized the notion of plasticity, but they definitely recognized that ''sand,'' ''dirt'' and ''mud'' were not equivalent along this dimension. Neither ''sand'' nor ''mud'' retained shapes given them, but ''dirt'' did (it might be observed that these distinctions themselves were relatively fluid). ''Sand'' was the least plastic of the three. When thoroughly dry, the sand available to these kids could be mounded, but would hold no other shape. It was most frequently used with containers out of which it came as vanilla, salt, fairy dust, vinegar and so on. Werner says that the world of children is a world of action in which things are valued as a function of their handiness or efficaciousness in play.[11] ''Sand'' was not terribly useful in play and except in those cases where its unique properties made it handy indeed, it was regarded with disfavor. Remarks like, ''That's just *sand*,'' abounded. It was known, however, that ''sand'' could be turned into ''dirt'' by the addition of water. In the episode a way back the girl, digging for cake dirt, says: ''This feels like wet sand.'' In what follows the same two kids make this clearer:

> The girl has just found an old gallon milk container filled with water. The boy says: "I want some." She pours some water on his mound, saying: "It's a mud cake!" She is very excited and he shouts: "Yahoo!" She pours some water on her mound. He starts slapping and mounding his mound. He says: "Yeah! I can get it real hard!" And a little later he adds: "I can make a tunnel through!"

On the other hand, the same boy tells two other boys, a year and two years younger than he, in a similar situation, "My house will last longer than yours. I've got more water in mine. " Then, after the other boys have drowned their mounds: "You put too much water on it. Yours won't dry out and last forever." However the bulk of references to water and sand (and for that matter, water and dirt) had to do with the fact that water makes sand-dirt strong and hard. On one occasion a group of several boys spent two hours amassing a huge pile of dirt and sand, the point of which, as it evolved, was to build a house taller than the oldest kid. This would be possible, "Because we're going to put water in the dirt and it will stand up then and last forever."

In the absence of water, however, "sand" is pretty poor material. "Dirt" on the other hand is great stuff. It will do anything the kids want. It is the essential building material and the essential matrix in which to construct tunnels and holes (since the roof and sides are less likely to cave in). It can be generally improved by the addition of water, but this is not critical. Pounding, slapping, patting and beating all help to "strengthen" or "make hard" the "dirt." "Dirt" itself was of several kinds: "new dirt," "old dirt," "good dirt," "bad dirt," "found dirt," "my dirt," and so on. Asked to explain what "new dirt" was a five year old girl said: "All you have to do is look under the ground and there it is." This definition was lived out often. A five year old boy said: "I need some new dirt," upon which he proceeded to uncover some and add it to his mound. "New dirt" was damp, and therefore plastic (because being buried it had been kept from the drying effects of the atmosphere). "Old dirt" was defined as "Dirt you've had for a long time," and it usually approximated the plastic quality of "sand." "Bad dirt" sometimes referred to "old dirt" but more often described damp sand with which too much humus or humus-rich clay had been mixed, that was getting, as a four year old boy said, "too dirty." "Good dirt" was likewise sometimes confused with "new dirt," but generally described clean, damp, plastic sand. "Good" and "bad" carried information about the purity of the substance and were closely related to the color of sand (white and clean) and humus-rich clay (black and dirty).

"Found dirt" and "my dirt" were related too. One day a four year old boy picked up a pile of "dirt" from the center of the sand pile and said: "Look! I found a whole pile of dirt." This happened all the time, as if "finding" implied laying hands on. Once a three year old girl said to another: "No, put it down. That's my house dirt." For a whole afternoon and the following morning a group of kids "had dirt" as a main theme. They dragged containers to the middle of the sandbox saying, "This is my dirt." They put "their dirt" into the containers, dragged them back to their mounds, dumped or spooned the dirt onto the mound, and said: "Look how much dirt I have." Sometimes during this sort of play, ownership was contested by one or another kid who would say: "That's not your dirt. God owns the dirt." On another occasion a five year old boy making a mound said: "Look how much dirt I have." A six year old responded with:

> "You don't have as much dirt as the devil. He has a whole wall of dirt. He lives in dirt. He has a door of dirt." The five year old said: "Yeah, and every time he opens the door it falls down." The six year old said: "It's not dirt, it's mud. The devil eats mud. He eats fuel all the time." "Fuel?" "Yeah, he has to eat fuel to make fire."[12]

"Mud" is "dirt" or "sand" to which too much water has been added. "Mud" is either made by the kids or comes after a rain. Most of the time it is too liquid to hold any form at all, but in its most plastic form it can be made into mud cakes or mud patties. It is known by the kids that these will be very hard when dry. Most "mud" is inadvertent. That is, it results from the attempt to make dirt. A girl (age four) puts sand into a shallow pan and says, carrying her pan to the spigot, "I'm going to make some *good* dirt." She adds water, far too much and then proudly announces, "I'm making mud!" None of the kids liked to get "mud" on their clothes, though most of them liked to get it all over their hands. "Mud" was used as a threat in a different way than "sand" or "dirt." Kids

said things like, ''I'll get mud on you if you don't move your castle.'' When they threatened with ''dirt'' or ''sand'' they said, ''I'll throw sand at you if you don't stop.'' The difference lay in the distinction between ''on you'' and ''at you.'' ''On you'' had to be used because the ''mud'' was so liquid and so unplastic, that it could not even be wadded up for throwing, and because once it got ''on you'' it wouldn't come off you.

All of this suggests that ''sand'', ''dirt,'' and ''mud'' occupy locations in a functional semantic space of three dimensions of which the most critical is that running from plastic and useful to non-plastic and useless. A second dimension is that running from white and clean to black and dirty. The third dimension runs from dry to wet. In such a space the locations occupied by the kids' substances would constitute clouds of meaning rather than points, which, while fusing into one another, would have obvious and distinct centers. Thus ''sand'' would be, at the center of its meaning, dry, white, clean, non-plastic and nearly useless; ''dirt'' would be damp, both white and black, dirtier than ''sand'' but not so dirty as ''mud,'' basically plastic though fading off toward its wet and dry ends, and correspondingly useful; while ''mud'' would be wet, usually black, thoroughly dirty, non-plastic, and nearly useless. But these don't exhaust the things kids thought about dirt.

For example, belief in the generative power of dirt waxed and waned. At one point the loan of our baby was requested so that he could be buried and so grow more like him. While they never buried our son, the Big Kids did bury leaves, peach pits, grass, twigs, nickels and pennies:

> G(irl): ''What are you doing?'' B(oy): ''I'm going to make the grass grow.'' He proceeds to pull up pieces of grass which he then buries in the sand. The girl watches him intently. G: ''Your grass is going to come up and wreck my house.'' B: ''That's okay.'' The girl then proceeds to level her house mound and starts to pull up grass, burying it in the sand like the boy. He has gone off to get water and comes back with a jug. B: ''Whooeee! I'm watering the grass.''

Older kids were less sure than the younger ones of the power of ''dirt,'' and after a, couple of days dug up their money, though they continued to bury – and water – twigs and apples. During this time there was a weak but countervailing belief in the power of dirt to kill by burying. While burying a plastic cowboy a six year old boy said: ''Buffalo Bill, we love you so much; Buffalo Bill you're dead; Buffalo Bill, you'll never come alive again.'' After which a rather worried four year old boy queried: ''*Pretend* he'll never come alive, right?''

Underwriting this connotative range is the fluidity, the plasticity of sand or dirt.[13] Not only can it be denoted anything under the sun, but it can, to an extent, assume the *form* of the thing denoted, retaining it until the need for the form and the thing has disappeared. At which point, ever obliging, the sand or dirt is ready to assume a trillion other characters. (In action dirt is more like a pictogram than an alphabet; in repose it's more like an unshaped breath than speech.).

The role of dirt in play is twofold. On the one hand it provides a touchstone, a concrete, point-out-able, point-at-able manifestation in the world outside the child of a notion within. At an age before gestures have become abstract conventions or mini-dramatizations, the child, having learned to denote through pointing to things, still needs something to point *to*. That thing-being-pointed-to, whether hole or mound, is a necessity. When a five year old girl tells a three year old girl in the role of ''baby'' to ''Go home!'' she cannot mean ''Go anywhere!'' or ''Go to your veritable home!'' but ''Go there, to *that* idea made manifest in *that* pile of dirt.''[14] But, on the other hand, even as the dirt fulfills this vital role, it carries out another: dirt serendipitously intervenes in the scenarios being enacted. The car being propelled along the ground encounters a mound. The child says: ''Now the car is going *up* the hill. Now the car is coming *down* the hill.'' These gestures result from the interaction of car-driving fantasy and accidentally encountered mound.[15] These interactions immeasurably enrich the play of the child, prompting invention. Two-fisted, sand and dirt prompt and prod, even as they concretize and make manifest.

THE ROLE OF PLAY IN THE DEVELOPMENT OF IDEAS OF SAND AND DIRT

At the same time that the sand and dirt serve these roles in play, play serves to structure the relationship of kids to sand and dirt. In the absence of a theme of whatever power, Big Kids,

like Little Kids wad dirt, let it trickle through their fingers, trace arabesques in it with sticks, even throw it, but do not explore it or exploit it, try to understand it or even attend to it. But the articulation of a theme changes this. It provides a role that the sand or dirt may or may not be able to fill, but one that the child will attempt to force it into. In this attempt, but relating failure to success, the child develops an understanding of what sand and dirt *are,* how they relate to one another, to water, and to other substances. Kids aged three and four build bridges and walls with damp sand, to watch them – intently – crumble and fall; kids aged five and six have discovered these limits of their materials and call out for boards and sticks. Such successes and failures of sand and dirt to do as bidden also shape the stories enacted, moving them into new channels – and putting new demands on the dirt and the sand – or into older ones, tried and true. This interaction progresses like a servomechanism, gradually resulting in a certain isomorphism between the play and its medium. As this isomorphism increases, as the child increasingly comprehends the nature of his material, the range of play subjects open to development within the sandbox decreases.[16] Other sources of information about the nature of sand and dirt come to predominate over what can be learned by playing with it, and these emphasize the importance and reality of sand and dirt *as such.* Sand play becomes a matter of building conventional castles . . . at the seashore.

THE END OF SAND PLAY

At the seashore . . . Heinz Werner tells the story of a boy returning to the seashore after an absence of four years:

> The Scupin boy at the age of eight no longer recognizes the sea which he knew at the age of four. At that time the sea was determined by different things-of-action. Such small objects as mussels and little stones, butterflies and the wet sand ready to be molded into simple forms – these made up the world of the sea-shore for the four-year-old, whereas the eight-year-old conceives this same region as an arena for sports and swimming, and no doubt thinks of the tremendous flat surface of the water as an invitation to adventure.[17]

This is what also happens to the sandbox. One day the kid steps into it with things to do that can't be done there, and he or she leaves, in this case never to return; for unlike the seashore the sandbox is an arena with little room for the things-of-action of the older child.[18] But the experience of the younger child has been subsumed, not lost. It's there to provide a foundation for whatever the older child wants to build on it.[19]

ENDNOTES

1. I first reported this figure in "Now and then: comparisons of ordinary Americans' symbol conventions with those of past cartographers," *Prologue: The Journal of the National Archives*, **9**(3), Fall, 1977, p. 156. How and why kids *do* draw hills was the subject of "Cultured symbols: thoughts on the cultural context of cartographic symbols," *Cartographica*, **21**(4), Winter, 1984, pp. 9–37. I reprinted the substance of both these papers in my *The Power of Maps* (Guildford Press, New York, 1992), pp. 154–181.
2. I first reported this figure when I read an earlier version of the paper in hand, originally called, "Early mound-building: a psychogeomorphology of mud," at the annual meeting of the American Association for the Advancement of Science in Boston, 1976. A mimeographed version of this paper, then called "Early mound-building: some notes on kids' dirt play," was widely circulated and frequently cited.
3. The original version of the paper became, at the time of its AAAS presentation, an Associated Press wire service story and thus the subject of radio and newspaper stories and editorials. I was interviewed on radio stations from San Diego to Boston, from Shreveport to Indianapolis, from Austin to Atlanta; and the story appeared in newspapers all over the world. Invariably the work was treated as a joke, typically at the expense of the dotty college professor, or as an illustration of the consequences of having to publish or perish.
4. I have, of course, no way of knowing that this was the first occurrence of the "game," that the two boys hadn't played it together before, that, in fact, the younger boy didn't invent it himself. However unlikely, that the two of them together learned the "game" from a

third party is quite possible. In the play with the girl, the two-year-old was distinctly the leader.

5. I prefer to use this locution because of *my* image of what a game of house consists of. What went on under this heading in the Backyards as well as in the Playground had little to do with my image of a couple of girls pushing a doll around in a baby carriage, changing its clothes, and so on. ''House,'' in the context of a sandbox at any rate, involved primarily the construction of a house mound (a pile of dirt designated ''the house''), its articulation (walls, doors and windows being especially common), the delineation of a number of kitchen activities (predominantly cooking), and then, almost epiphenomenally, the development of ''going to work,'' ''taking care of baby,'' and other social scenarios.
6. I like the way Irving Goffman treats this issue in *Frame Analysis: An Essay on the Organization of Experience* (Harvard, Cambridge, 1974). This integrates play into a general theory of human situations.
7. Heinz Werner, *Comparative Psychology of Mental Development*, Revised Edition (International University Press, New York, 1948). This issue is dealt with throughout the volume, as are many aspects of the dirt play I observed, but pages 383–402 are particularly relevant. See also: Heinz Werner and Bernard Kaplan, *Symbol Formation* (John Wiley and Sons, New York, 1963); and much of the work of Jean Piaget and colleagues, but especially, Jean Piaget, *The Child's Conception of the World*, (Littlefield, Adams, Totowa, New Jersey, 1969).
8. The numbers were: 78, 85 and 101. These include uses of sand as well (as in ''Look, the sand makes this thing stand up''). I think these figures are typical for play in the Backyards and Playground, but very, very high with respect to Parks play.
9. Other things included: glue, rain, stomach, turtle, hat, guns, cement, powder, and money.
10. All these questions of lability of reference, token-object dualism, transformations and magic, evidently refractions of a single light, seems to hover around the cooking of food like a starving orphan. Not only has, *inter alia*, Claude Lévi-Strauss stressed its importance in understanding human thought (as in his felicitously titled *The Raw and the Cooked* (Harper and Row, New York, 1969), but here in the sandbox we find it *the* predominant activity of young children. For the child it is a set of multiple transformations, for not only is he or she mimicking the transformation of stuff into food as observed in the kitchen, but is also transforming undifferentiated sand into food-tokens (and perhaps even, in some cases, into food itself) through a set of ''cooking'' gestures, generally involving putting the sand into containers and taking it out again (containers equal fire?). That is, there are three sets of transformation simultaneously afoot: stuff into food (in the kitchen), dirt into food-tokens (in the sandbox), and stuff into food into dirt into food-tokens (*between* the kitchen and the sand-box).
11. Heinz Werner, *op. cit.*, p. 383. Werner's discussion from this point on is invaluable.
12. This is another transformation problem at its heart: that of transforming public or ''unclaimed'' stuff into ''private property.'' Most of these kids had pretty clear ideas about the nature of ''mine,'' ''yours,'' ''ours,'' and ''everyone's,'' especially when toys were at stake. Ownership of the sand provided an arena of ambiguity in which to work out the power and functional character of the terms of ownership. For an article on verbs of possession in children see Dedre Gentner, ''Evidence for the psychological reality of semantic components: the verbs of possession,'' in Donald Norman and David Rumelhart, (Eds.), *Explorations in Cognition*, (Freeman and Company, San Francisco, 1975), pp. 211–246.
13. Another important consideration is its variety. That is, it is variously plastic, variously wet and dry, and variously colored. I watched kids playing in the Backyards in a brand new sandbox filled with luscious, plastic, beautifully cream-colored sand. One of the first things they did was make forays, some of them distant, for darker colored soils, much, it might be added, to the consternation of the guy who'd just bought the lovely ''new'' sand, and to whom purity was a more significant evaluative dimension than variety of color.
14. For the importance of pointing in the child see Heinz Werner and Bernard Kaplan *op. cit.*, p. 77 and following. For a rather different point of view, one that might have some

bearing on the need of the child for something to point to, hold onto, and so on, see John Bowlby, *Attachment*, (Basic Books, 1969), p. 265 and following.

15. They are also the result of parallel interactions among the kids their parents, and picture books. In my "Cultured Symbols," *op. cit.*, I characterize the "hill" as that that develops from, for example, hearing the parent read outloud a book at which the child is looking in which a train, say, goes up a hill. As it does, so does the parent's hand and voice. In the sandbox, as in drawing, the kid transform this conceptual-gestural-vocal-graphic complex into motor behavior, that is, *lives* what he has *learned*. Older kids live this more . . . *dramatically*, as they build topographic relief into bike riding, skateboarding, sledding. See Robin Moore's *Childhood's Domain* (Croom Helm, Beckenham, Kent, 1986), particularly pp. 74–78, and drawings throughout, but especially the great one on p. 69.
16. Although my data are too sparse to allow me to delineate a developmental sequence with any security, I can say that the older children, aged seven to thirteen, observed in the Parks dealt with dirt, mud, fill, and so on in highly realistic terms: that is, they built dams, waterways, caused "avalanches" and mud slides, and so on. The material they worked with was a large and highly viscous dump of highway fill material along a stream. Except for the avalanches, the relation of play material to the material *approximated* by the play material was very close. Additionally, they stood on opposite sides of the stream and threw mudballs or dirtballs at each other, distinctly . . . *in another world-of-action*. Unsystematically observed children playing in railroad cuts between the ages of, say, seven or eight and eleven or twelve, but in couples as opposed to the larger group watched in the Parks, occupied some medium position: their play was more fantastic than that in the Parks, but less than that in the Playground. They were frequently observed 'mining," for what I never could find out. Robert Paul Smith, in *"Where Did You Go?" "Out" "What Did You Do?" "Nothing"* (Norton and Company, New York, 1957) talks about "garnet mining" when he was a child, age unspecified. I have an unsupported feeling that dirt play continues after age five or six with decreasingly fantastic elements, but more distant from home, gradually becoming small-scale earth-moving hydraulic-engineering play, through elementary school, dying as such at that point. I think it may be picked up again in high school or later for its entertainment value, but this is rare except in socially acceptable settings like the beach or in gardening. Parents, of course, indulge again later on when they "play" with their children.
17. Heinz Werner, *op. cit.*, p. 383.
18. This is not strictly true either. Even in the Backyards this fall, I have watched older children use a dirt play setting to practice the long jump in, landing with their feet in the sand. In less structured contexts I have watched children jump from the play equipment of the very young (those cement frogs for instance) into the sand, or from piece of equipment to piece of equipment. I have also seen junior high school children do art projects in the sandbox, cement or plaster casting, for instance. The sandbox *does* provide an environment of different things-of-action for the older child, teenager and the adults who send their children to play there, so restarting the entire cycle.
19. I would like to thank the following who have supported, encouraged or abetted in a variety of ways the work in hand: Jeremy Anderson, Roger Hart, Betty Murrell, Mark Ridgely, Bill and Cindy Pitt, Ingrid Hansen Wood, and the children – especially Randall – who played, but not for me. This paper is dedicated, with love, to the memory of Jeremy Anderson.