Maps/Language

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Abstract

Sign systems infected with language, and constructed out of elements dependent on language, maps nonetheless are neither a language (or a form of language) nor structured like a language in any way. Physically embodying human locative knowledge, maps are exploited by "language" to advance arguments about the world, generally in the service of the status quo, that is, of our current system of nation-states. Here "language" is to be taken as referring to the cognitive substrate from which concepts arise, concepts which, when wed to a mark, constitute the postings out of which maps are built. These postings conspire to construct the propositions that maps shape into the arguments they make about the world.

Keywords

Maps · Language

For a long time, people thought, and talked, about maps as though they were representations, as though they were pictures. This is pretty hard to understand if you've ever looked at a map. Most of them bear so little resemblance to the world or anything in it that maps were long thought to require legends to make things

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intelligible, legends that in any case never made it plain why on one map Europe looked much larger than South America, while on another it was half its size, and both in colors no one ever saw except on a map. *To give just a single example.* No, even the most persuasive maps make terrible pictures, almost every one of them omitting the clouds, the night, and all the commotion, but all of them omitting almost everything to let them concentrate on . . . this or that. *Selection* they call it – selecting the features of interest – and it's useful; it's necessary, but, along with so many other things, it's fatal to the picture theory of the map.

But if they're not representations, what are they? I once wrote a paper called "The Map as a Kind of Talk" (Wood 2002). I wanted to make it plain that this was about an alternative to the representational idea, but it was a way I'd been thinking about maps for the previous 20 years, more and more strongly, as talk, as discourse, as active participants in the hullabaloo we call life.

But as a *kind* of talk, I never meant that maps were literally talk. They're not any more than they're pictures. Maps aren't made with graphic equivalents of morphemes, nor do they have anything like the syntactical structure of spoken language, despite the rise, in the 1970s and 1980s, of clatter about "the language of maps," about "maps as natural languages," about "cartographic language." A lot of this, I think, grew out of people staring too long at the diagrams made by proponents of the "communication model" of cartography, the tubes, the arrows, running from "reality" or from "the world," through the map or the mapmaker (or both as connected by further arrows), to the "map reader." This arose in cartography in the 1960s, in response to the popularity in the 1950s of Claude Shannon and Warren Weaver's "communication model." Shannon was an electrical engineer and his "information theory" was engineering applied to "communication" – and hugely important – but as a result "signal" and "noise" became important concepts in cartography where they had little use. Why? Because maps *aren't* communication devices transmitting the world through themselves to the reader. They're not telephone lines.

They're the opposite. Like the *things we say* when we talk on the phone, maps are the content.

The things we say: they're the heart of the matter. They're what does stuff, not the language in which they're encoded, or the medium through which they're transmitted. Which is why we can translate books from one language to another and experience them in different media. It's not the language or the medium that matters (or not all that much), but the stuff coming through them: the things, the ideas, the concepts, the propositions.

Yes, *the propositions*. Propositions are "a plan or scheme suggested for acceptance," says a popular dictionary, and this'll do for a start. That's what maps do: they advance a plan, a scheme for acceptance. Or rejection. Rather than representative, maps are performative. Maps do rather than denote. Rather than pointing to things existing independently in an external world, maps like talk help bring the world as we know it into being. In the end, the map is nothing more or less than a vehicle for the creation and conveying of authority about, and ultimately over, territory, the most potent, in this day and age, this side of police and military power. The map claims

this authority as the social manifestation of what it presents as its intrinsic and incontrovertible factuality, a factuality constructed through the social assent given to the map's propositions. These propositions are realized through the fundamental spatial/meaning propositions that I and others call *postings* (Wood and Fels 2008; Krygier and Wood 2009). The posting is a simple proposition of the form, "*this* is *there*."

Precedent Existential Proposition

Note: two parts to this proposition. The first is the most daunting. *This*, what is *this*? If you look it up in the dictionary, you'll find something about it being a word used to indicate a person, thing, idea, state, event, time, and remark. *Person*, *thing*, *idea*, and *event* – and this list could be extended to include all generic nouns – are all instances . . . of the *pointed to*, of the *signified*. That is, *thises* arise from the cognitive domain in which we divide the world into the parts that we, individually and/or collectively, think about, talk about, point to, use, make, visit, and so on. *Thises* are the things that maps are *of*. They frequently include things like streets, mountains, counties, rivers, cities, forests, states, nations, crops, and all the rest of the mappable world.

These all, of course, are conceptual categories, which is to say, they're thinking we do about what the things we call rivers and countries *are*. When we say something is a forest, a city, what we're saying is that it's a member of the *class* of such things, a class that resides and is continuously reconfigured in some sort of cognitive domain, conceptual space, conceptual universe, content space, content plane, semantic field. To *say* (out loud) that something's a city or a river means that the signified – the concept, content, categorical type, or whatever we're going to call it – has been wed to some sort of vehicle, to a *sound* capable of carrying the concept, content, categorical type out of the conceptual universe into the world of speech. To put it in other words, we have to marry the concept (city, river) to . . . a sound or to a mark or to something else from the material world that others can perceive. This pertinent expressive element – from the plain of expression and from the domain of signifiers – we call the *signifier*.

The marriage of signified and signifier we call a *sign* (Saussure 1959; Barthes 1973; Eco 1976). Aggregations of signs on a map comprise systems of signs – supersigns and super-supersigns – and it is from these systems that the higher-order propositions arise that enable maps to . . . control our lives. Thinking about maps as systems of signs isn't very trendy these days, but it remains fundamental: everything else – all the action and all the performativity – that maps may or may not engage in is carried by the signs. They've got to be where one begins. I mean, that's what maps *are*: collections of signs on paper or a screen.

Collections of *signs*. They're *not* collections of marks. The difference between inert marks and active signs is that signs lead to some kind of action. Why else make signs, why else advance propositions, unless to affect the state or behavior of another? Without this motivation it's hard to understand why people would make,

publish, and disseminate maps. The sign theorist who made this point most straight-forwardly was Colin Cherry, who defined a sign as "a transmission, or construct, by which one organism affects the behavior or state of another, in a communication situation" (Cherry 1957, p. 306).

Contrast his definition of a sign with those of Saussure, Barthes, and Eco that we've just alluded to. It's as though they came from different worlds, which in a way they did. Although written in the 1950s, Cherry's definition of a sign is a generalization of C. S. Peirce's, which Cherry distinguishes, "by the requirement that a sign must be capable of evoking responses which themselves must be capable of acting as signs for the same (object) designatum" (Cherry 1957, p. 220).

Peirce's sign formed an essential part of his idea of logic – his approach was philosophical not linguistic like Saussure's – and a sign, Peirce said, was "something which stands to somebody for something in some respect or capacity" (Peirce 1931–1935, Vol. 2, para. 228). Peirce distinguished three triadic semiotic relations of significance, of which the second trichotomy of the sign consisted of his famous icon, index, and symbol, ad infinitum (almost literally, since Peirce identified 66 classes of signs). No matter how deep we dive, we won't be finding many points of contact between Peircean and Saussurian signs, nor between Cherry's somewhat individual transformation of the Peircean sign and the Saussurian sign, which is too bad, because the Saussurian sign lacks the motivation of Cherry's sign and Cherry's sign desperately needs Saussure's clarifying and simplifying formalism.

Analytic linguistic speech-act theorists like J. L. Austin are in a third world altogether, which again is too bad, because Austin's efforts at understanding what one is doing in saying something – especially his concept of the performative (yes, it originated here) – would be so much more valuable if they ever made contact with communication theory and/or semiology (Austin 1962). Understanding maps – and how they do what they do – really requires Peirce's and Cherry's motivation, Saussure's sign, and Austin's performativity.

Postings

So let's take the *idea* of a house and marry it to a *mark* of some kind, that is, to an element from the domain of signification, say, a ■. In a map, this union of the house idea and the ■ mark takes place on the map's sign plane. This is to say that on the map's sign plane, the ■ is understood as a house. The map's sign plane differs from other sign planes by virtue of its indexicality, that is, the convention that *locations* on the cartographic sign plane *are signs themselves*. The concept they embody is "location x,y in the world," while their mark is simply their x,y location on the map. When a ■ is located on the cartographic sign plane, the ■ is understood not as *any* house but as *the* house at *that* location in the world. That is, the cartographic sign plane acts as an index to which house in the world the ■ is a sign for, meeting in this way Peirce's conditions for an indexical sign function.

We call this location of the ■ on the sign plane of the map a posting: *this*, the house, is posted *there* where the map says it is in the world: *this* is *there*. *Thises* may

be located at more than one *there* (there could be many houses) and a *there* may be populated by many *thises* (as when weather maps post temperature, pressure, wind speed, and wind direction at a common *there*). Multiple *this is there* propositions (or *postings*) create and comprise the territory of the map. This territory becomes the subject of the map's action.

Here, for example, are the houses along a *block face*, that is, the houses facing the street along one side of a block (Fig. 1). Note that in addition to posting seven houses, we have varied our ■ to post the ground plans of the individual dwellings. Considered as the sign of a unitary block face, this assembly of individual postings can be thought of as a synthesis, as a supersign, as, that is, a sign composed of more elemental signs. Such supersigns can be piled up endlessly and constitute postings of supersigns.

Here, for example, is a whole neighborhood (Fig. 2), a neighborhood comprised of blocks among which is the block face of Fig. 1. The neighborhood too can be thought about as a synthesis, even as a supersign, though here the streets inferred – even though they're not posted – suggest that we've moved up a level in the hierarchy, perhaps to that of a super-supersign. This illustrates the way relationships among the *thises* and *theres* within the cartographic sign plane can facilitate exchanges of meaning. A further example, the coincidence of this map with a map of an engrossing school district, is enough to send the kids who live in *this* neighborhood to *that* school. Such relationships are precisely syntactic, but this is a *spatial*, in fact a *geographic* syntax, not the syntax operating in language that governs the relationships among words.

Kicked farther downscale this example can be made to yield the argument in an almost incontestable form (Fig. 3). Just as the relationships among the *thises* enabled us to infer the streets along which the houses had been built, this further shift in scale

Fig. 2 The neighborhood
that includes the block face of
Fig. 1 – Boylan eights in
Raleigh, North Carolina

makes clear the way a coincidence of *theres* – as here between the block face and the
neighborhood and between the neighborhood and this portion of a city – affords and
affirms the mapping of authority (political, cultural, religious, scientific) over terri-
tory and its constituent *thises*, potentially at many levels. The neighborhood is
Boylan Heights, an older inner-city neighborhood in Raleigh, North Carolina,
a portion of whose downtown appears in the upper right. Further reductions in
scale would reveal Raleigh in Wake County, Wake County in North Carolina, and
North Carolina in the United States. The relationships among the *thises* on this map
fall under the sway of the nation, the state, the county, the city, and any number of
intermediate authorities, including police districts, school districts, fire districts, soil
and water conservation districts, and so on, practically ad infinitum.

These too can be mapped, as Fig. 4 makes plain. Boylan Heights, here in gray, is
posted within, smallest to largest, a couple of service routes (newspaper, mail), city
service districts (police, fire, garbage, planning), a state election district, and Wake
County school attendance areas. The largest of those shown here – Washington Sixth
Grade, Daniels Middle, and Broughton High School Attendance Areas – run right
off the map. These all nest themselves within still more encompassing entities: the
City of Raleigh, Wake County Soil and Water Conservation Districts, Wake County,
the Capital Area Metropolitan Planning Organization, the fourth US Congressional
District of North Carolina, and, larger than even these, North Carolina, the United
States, NAFTA (and other multinational trade organizations), NATO (and other
multinational defense alliances), the United Nations, etc.

At this point the map's conveyance of authority over territory is patent. Funda-
mental spatial/meaning propositions called postings make formal linkages with each
other and propose the existence of blocks, neighborhoods, school districts, police
precincts, cities, and all the higher-order social constructs that comprise the social/

Fig. 3 The center is Boylan Heights, the neighborhood composed of block faces (Fig. 2), which were built up from the posting of houses (Fig. 1). Here the neighborhood is surrounded by Raleigh's downtown (upper right), North Carolina's Central Prison (to the upper left of the neighborhood), and other features of the city, state, and nation

political world with which we're so familiar. Ultimately the factuality of the map's propositions rests on the social assent given the map by those in the universe that the map embraces, and this factuality endows the map with enormous authority. It's the authority wielded by the map – an authority great enough to nearly ... *go without question* – that gives the map its overwhelming utility in contemporary human affairs. It spares the state the necessity of enforcing the state of affairs embodied in the maps ... with police, with armed force, with the military. It's a kind of weapon, wielded just this side of armed force.

Of course initially the propositions advanced by such maps may be rejected. Indeed many are hotly contested. What results is a battle between maps advancing alternative propositions. Few maps see the light of day without such battles. In the end the stronger force prevails – which is to deny none of the changes, compromises, revisions that the battle produced – and a map is published which in fact can no longer ... be contested. *This* map's proposition may be *resisted*, but the forces
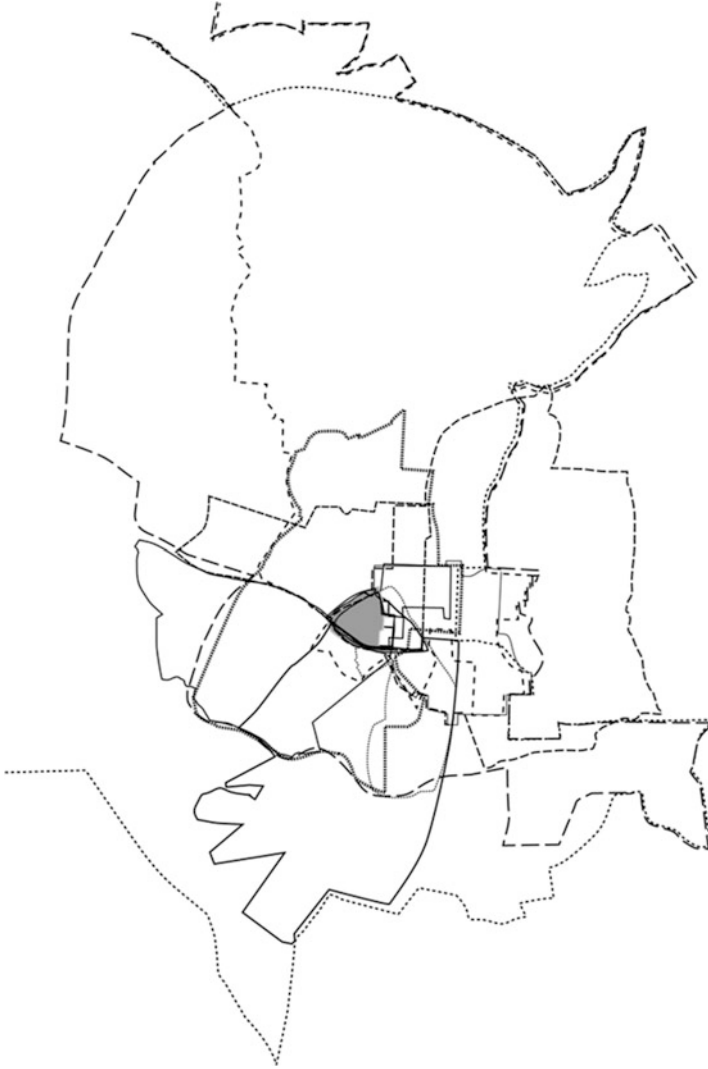
Fig. 4 Map of some of the (very many) administrative and service districts within which the neighborhood of Boylan Heights (in gray) is embedded, along with the block faces that make up the neighborhood and the house postings that make up the block faces

working through the map will, for example, permit you to vote for only *those* candidates for office, to receive only *these* services for the taxes you pay, your kids to attend *only* the school proposed.

For the time being … these maps may have to be remade every 10 years or annually or even more often, but while they're in force, *they're in force*.

The force behind this map is of course that of the school board, but behind the school board is the force of law. Again, ultimately it is that of the police, the military. Those who lived through it cannot forget the national guard enforcing the rights of black kids to attend schools previously closed to them as attendance zones were redrawn in the wake of *Brown* versus *the Board of Education*. When required, the gloves do come off.

The power of the map, however, is such that this display of force is seldom called for. Once a map has been published, it is pretty much taken as a description of the way things actually *are*. And if this is the way things *are*, what's the point of resistance? The map's *propositional* character becomes ... hard to see.

All maps work this way, though the behaviors bound may vary widely. Instead of *dwelling* and *going to school*, they could be *knowing this* and *knowing that*. My favorite example has always been the mapping of tree species against topography. "These two things go together," the map says, and as a consequence, to know two things ... is to know a third, for example, that a given species is a slope specialist. The *knowledge* brought into being this way – *constructed* this way – is no different from other *behavior* that is brought into being by a map. After all, *knowing* this or *knowing* that and *going* here or *going* there are equally behaviors and are equally caught up in the larger frame of social action. I want to say this isn't about power (as the school board example so patently is) but about knowledge but ... *what's the difference?*

Tools for Governing

Nor is it simply the *conveyance* of authority, for in every instance the map is equally implicated in the *construction* of authority. Recall Fig. 4: every one of the borders shown or implied there was originally envisioned on maps. Take North Carolina's, for instance, which followed from a 1663 grant by King Charles II to the Lords Proprietors – a bunch of crown loyalists – of what Charles thought about as Carolina; which was to say, everything from the Atlantic Coast to the Pacific Ocean between 31° and 36° north latitude. Since 31° north is 70 miles south of the present northern border of Florida, this was an enormous swath of territory, which a second grant in 1665 extended by moving the border north 30′ (to give Carolina control over the Albemarle Sound and its shipping). Since the grant had been made on a small-scale map of the continent, where exactly 36° 30′ was *on the ground* was essentially unknown. Do I need to add that this embroiled the governors of Carolina and Virginia in endless controversy? Still, it took until 1710 for the governors to finally appoint surveyors ... whose work was a complete disaster. It then took another 18 years before a second attempt was made. This time the surveyors – by the end, all Virginians – ran a line west until they ran out of food, for 237 miles. Twenty-one years later, the line was run another 90 miles, and this continued, through confrontations with the Shawnee and the Cherokee, the American Revolution, and all the rest.

The way surveys like these were supposed to be carried out was by laying rods or chains out on the ground. Usually the line was a known border and the problem was merely to determine its length, but here the critical issue was its latitude, that is, the border's route *across the land*. The only way to do this was by shooting the sun. For a long time, this had been done with cross-staffs, though with improved accuracy since the middle of the seventeenth century. (It wouldn't be until 1757 that the sextant was invented.) After determining the latitude at the eastern end of the line, no minor achievement given the acrimony between the parties, chains – since the mid-seventeenth century, these would have been 66-foot Gunter's chains (though there were competitors) – were laid out along a line determined by using a circumferentor or a surveyor's compass (since the nineteenth century, a theodolite). A pin would be emplaced at the chain's end, and this is used as the starting point for the chain's next run, everything being regularly checked with the cross-staff or sextant and circumferentor or surveyor's compass. At the end of the day, the surveyors had to post the distances and directions physically walked to a plat or a sketch map drawn to scale with dividers and rulers (Linklater 2003, p. 18).

Well, that's how it was supposed to have been done, but, this being real life, in the end, the survey *wasn't* an attempt to fix the parallel of 36° 30′ but to run an approximation between specified natural objects agreed upon as a reasonable by the two governors' agents (at least until the Carolinians had left the party) (Byrd 1929). And simply to begin, the survey had to run through the Great Dismal Swamp, which almost scotched the whole thing right off . . ..

But accepting all that – and everything that followed (for centuries!) – note the sequence of mappings involved. First the grant was made by ruling lines on a small-scale map of the continent. Then these mapped line*s* – for a similar process later took place with respect to Carolina's southern and western borders – were laid out on the ground in a series of measurements, typically recorded in a notebook, that were subsequently posted to a map. Sooner or later the resultant large-scale map would be scaled down for certification and filing, and this was the map that provided the basis for property ownership and other mapmaking which depended, for the assessment of things like applicable laws, taxes, and the like, on the location of the state border *on the ground*.

Determining, updating, correcting, and maintaining North Carolina's borders has been and remains an ongoing process, as does the determining, updating, correcting, and maintaining of all the rest of the borders within which the neighborhood of Boylan Heights finds itself. For example, Wake County recently reposted its border with Franklin County. One reason for this was that when the border was last posted in 1915, the surveyor's propositions included terms – trees, stones, fence posts – that no longer exist, which meant that the propositions could no longer be tested, that is, neither affirmed nor denied. A more immediate cause, however, was the decision a few years earlier to jog the border around a handful of lots misposted, thanks to the errors of contemporary surveyors, that is, jogged around lots that had been posted to Wake County (instead of Franklin) in accordance with propositions the counties subsequently came to deny. Then rather than repost the lots to Franklin, the counties agreed to jog the border – that is, to repost it – *around* the misposted lots. But while jogging the border, the assessors and surveyors uncovered a host of other

irregularities and decided it was time to resurvey the entire line and *undo* the jog. Elsewhere in North Carolina, the borders of Guilford, Orange, and Alamance Counties are being reposted, and nationally the situation is common (DeConto 2009: A1).

Of course all of the lots that were moved from one county to another found themselves embedded in a different territorial hierarchy; that is, their school districts, electoral districts, and so on changed. *Within* the county the Preddys found themselves in a similar situation when the City of Raleigh reposted *its* border, moving the Preddys *into the city*, a reposting Raleigh carried out when it recognized that the part of the county the Preddys lived shared a conceptual type with other *thises* within the city, namely, similar demands for services. This reposting of city and county borders was itself caught up in the hierarchical structure in which the cities and counties are embedded: the new borders had to be approved not merely by Raleigh's city council and the commissioners of Franklin and Wake Counties but by the North Carolina General Assembly, for successively smaller units of government are defined within larger units of government (to ensure a more perfect union, *I mean*, registration). States, too: they're similarly caught up in the hierarchical structure in which they're embedded, and so their disputes have to be adjudicated by the Supreme Court of the United States. International borders have to be adjudicated... yes, well, and there's a train wreck for you!

It is this ceaseless circulation of meaning within the sign plane of the map that makes the map the potent instrument for management that it is. Its ability to present ontological propositions (such as the existence of counties, zoning districts, and ecological domains) as locative ones (that are located *here*) gives the map an unrivaled ability to transform desires, guesses, suppositions – you name it – into facts, facts that the map then composes into territories that it hierarchically layers to permit the transmission of authority, along with all the rest of the combinatorial legerdemain this opens the door to.

Talk on and Around the Map

In this scenario maps are free of language. In fact, they're anything but. They're embedded in language, infected with language, surrounded by language. The map plane itself is usually established with language, by its title (Boylan Heights, Raleigh, United States, North America), by reference to a reference grid (of latitude and longitude, a State Plane Coordinate System, or any of numerous other reference systems), or by other words on the map. And there are *tons* of words on maps, the title (and ancillary text) quite often, but mostly names of the endless features the map posts.

Besides these, maps are accompanied by a *paramap*, which tells us how to approach it. The paramap can be distinguished into the *perimap* and the *epimap*. The perimap is all the textual and other material not part of the map proper, but appearing with it on the same sheet, page, or screen. This includes things like the title, who made the map, when, how, and so on. It includes the legend, the scale bars,

text blocks expanding on the map's subject, photographs with their captions, callouts, and any other elements. It not infrequently overwhelms the map itself, but with the ostensible goal of helping the map on its feet. The epimap has a related function, but carries it out away from the map. It includes things like articles that may accompany the map, say in a magazine like the *National Geographic*, as well as articles in which the map has been embedded. It includes comments made about the map, very common in today's blogs, but drawing on a long heritage of map commentary. It includes press releases, marketing copy, advertisements, indeed the whole cloud of stuff generated to promote or situate a map.

Still, though surrounded and pervaded by language, though exploited, often ruthlessly by language, the map itself, though certainly a sign system, is not language, even less a picture. And it is precisely out of its differences from these other sign systems that its value arises, a complementary value enriching human communication with a locative dimension the others ultimately lack and providing a tool, even a weapon, that as much as anything makes the modern system of nation-states possible.

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