A Map Is an Image Proclaiming Its Objective Neutrality: A Response to Denil

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I'd like to thank Mark Denil for his thoughtful response to my article "Map Art."[1] The article, and the catalogue of 218 map artists that accompanied it, indeed all of the articles in what was essentially a special issue of *Cartographic Perspectives* devoted to map art, were necessarily preliminary forays into what is still largely a *terra incognita*.[2] All were offered in the full expectation of being, at the very least, amended. Omissions, for example, were egregious. Not only did I fail to include in the catalogue Andy Warhol, whose map of missiles in the USSR is fast becoming an iconic exemplar of map art,[3] but through sheer inadvertence our own Steve Holloway, whose map art has long since graced the cover of *Cartographic Perspectives*.[4] Such lapses should be made good once the catalogue goes online as a wiki, but the wiki will not address the conceptual problems Denil highlighted. The following remarks, therefore, are intended to clarify what I have been claiming makes a map a map, that is, what I've been calling the map's mask.

The map's mask establishes its alienation

Denil agrees with me that all maps wear this mask. "This, at least," Denil says, "is uncontroversial: the mask refers to the signs employed by a map to connote trustworthiness." That, however, is pretty much the extent of our agreement, because for me – to put the matter as inflammatorily as I can – by proclaiming its own trustworthiness the map establishes its alienation. Any discourse proclaiming its own trustworthiness is alienated discourse, what Roland Barthes called myth.[5] That the map was a kind of myth, in Barthes' sense, was what John Fels and I had demonstrated in our 1986 *Cartographica* paper, "Designs on Signs: Myth and Meaning in Maps," where we isolated the codes chiefly responsible.[6] Six years later I called the product of these codes "the mask *no* map goes without" in the lecture "How Maps Work" with which I inaugurated The Power of Maps exhibition I'd co-curated for the Cooper-Hewitt National Museum of Design.[7] Shortly thereafter, in "What Makes a Map a Map," a lecture I read at the Yale-Smithsonian Material Culture Seminar on Maps, I distinguished a class of map-related objects that *had not put on the mask*, were not alienated, and therefore not maps.[8] This class included experimental and other sketch maps.

In doing so I characterized an essential property of maps: their *objectness*, their *objectiveness*, their "*objectivity*."[9] This "objectivity" was established in the world of *inter*personal discourse – in talk, in conversation – whenever a communication was "sealed" as being "in the world" by various forms of *interpersonal validation*, especially by signs of assent: nods, repetitions, significant glances. In this *inter*personal world such discourse was not necessarily alienated. But in the *trans*personal world where maps as more or less permanent, transmissible descriptions of territorial relations find their peculiar utility, such discourse was *necessarily* alienated because the quality of being in the world (of being objective) was asserted

". . . an essential property of maps: their objectness, *their* objectiveness, *their* "objectivity.""*

not only without assent being granted (or even negotiated), but as though assent *had been granted*, that is, as though there were nothing problematic about the communication.

For me this problem of "objectivity" had first become acute in 1970-71 when I was struggling to make sense of the three hundred-some experimental sketch maps I'd collected for my dissertation from American teenagers on their first visits to London, Rome, and Paris.[10] The goal was to learn something about how environmental knowledge changed over time, so in each city I'd collected sketch maps early in the kids' visit, toward its middle, and near its end. The question, of course, was how to measure the changes. Kevin Lynch, who'd pioneered the analysis of experimental sketch maps, rejected the idea of comparing such "subjective" images to "objective" data:

> To compare with these subjective pictures of the city, such data as air photos, maps, and diagrams of density, use, or building shape might seem to be the proper "objective" description of the physical form of the city. Considerations of their objectivity aside, such things are entirely inadequate for the purpose, being both too superficial and yet not generalized enough. The variety of factors which might be evaluated is infinite, and it was found that the best comparisons to the interviews was the record of another subjective response, but in this case a systematic and observant one … While it was clear that the interviewees were responding to a common physical reality, the best way to define that reality was not through any quantitative, "factual" method but through the perception and evaluation of a few field observers.[11]

Lacking such field observers, I compared my sketch maps both to each other and to an arbitrarily selected standard,[12] *arbitrarily* selected because, unlike Lynch, I as a geosopher could *not* put consideration of the objectivity of air photos, maps, and diagrams aside.[13] Indeed the question lay at the heart of my dissertation, in which I was to conclude that *all* maps were mental maps, that is, "subjective" to one degree or another.[14]

The logic here was straight-forward. Among other things that Lynch's "proper 'objective' descriptions" could have referred to were state-of-the-art maps, but an introduction to the history of cartography had made it plain that over time state-of-the-art maps varied even more wildly than my sketch maps did. All maps varied, all the ones in people's individual and collective heads, and all the ones on paper. None "reflected" the "real" world. Apparently "factuality" was a state of mind. But if it was, then all maps *were* mental maps. I summarized this in a diagram that distinguished internal and external states of individual, consensual, and standard maps (Figure 1). No examples of "internal maps" can be displayed, if such maps even exist, which today I'm inclined to doubt. Whatever the form of the world in our heads, it is unlikely to take that of a map.[15] But Figure 2 displays a couple of individual sketch maps, and Figure 3 a pair of contrasting consensual maps. Consensual maps are shared by groups of like-minded, fellow-thinking people but are contested by others. Other consensual maps include those of contested voting districts, contested land claims, and the full range of counter maps. Standard maps exist in an abundance too great to even estimate: they're the maps you download at Google Maps, buy at gas stations, and consult in the atlas at the library.

In retrospect this scheme was breathtakingly naïve but I had yet to tumble to the idea of social construction.[16] Indeed it wouldn't be until 1979 that Bruno Latour and Steven Woolgar would publish *Laboratory Life: The Social Construction of Scientific Facts*; and more than twenty years before I'd

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

Figure 1. This is Fig. 2.0 from my dissertation, I Don't Want To But I Will, *as published by the Clark University Cartographic Laboratory in 1973.*

". . . the map insisted on being accepted not as a discourse about the world (which would be open to discussion, or a fight) but as the world . . ."

pick up Steven Shapin and Simon Schaffer's *Leviathan and the Air-Pump* and really awake to the potential of the sociology of scientific knowledge for theorizing the standard map as a form of socially constructed geographic facts.[17] In the meantime I remained puzzled by what it could be, if *not* correspondence to the world, that compelled acceptance of the standard map.

To this puzzle Roland Barthes offered a couple of solutions. The first was his notion that there were forms of speech, that he called myths, that denied that they were forms of speech, and which therefore insisted on being taken ... *as facts of the world*. Invariably these "facts" made the status quo out as natural, and therefore inevitable (this was Barthes famous *naturalization of the cultural*), and it struck me immediately that the standard map was just such a myth.[18] Barthes' analysis of myth turned on his semiotics, and semiotics turned out to be tailor-made for maps.[19] John Fels brought the semiotics of Umberto Eco and Algirdas Greimas to the table,[20] and together Fels and I were able to identify ten codes that either the map exploited or by means of which it was exploited (Figure 4).[21]

Although Fels and I didn't use the term "mask," our description of the actions of the presentational and rhetorical codes foreshadowed its use: we referred to Geological Survey topo quads as "dressing in the style of Science" as other maps "will dress in the style of Art. Or in the style of the Advertisement. Or in the Vernacular." "The rhetorical code," we wrote, "appropriates to the map the style most advantageous to the myth it intends to propagate."[22] It was when recapitulating this argument in "How Maps Work" that I concluded that it was through the presentational code "that the essential mask is donned, here that the map declares its impartiality, its neutrality, its objectivity."[23] That is, it was with the presentational code that the map insisted on being accepted not as a discourse *about* the world (which would be open to discussion, or a fight) but *as* the world itself (about which we could do nothing, which we could only accept), this is to say, as myth.
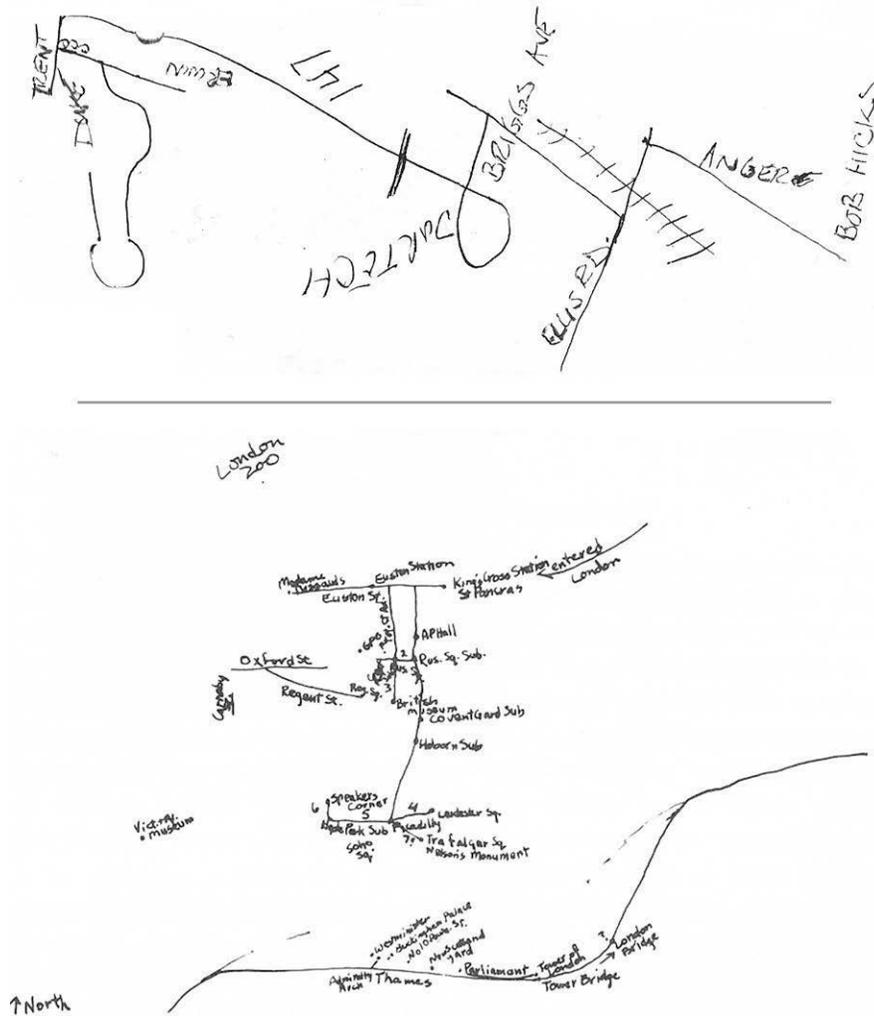
Figure 2. Here are a couple of sketch maps. Top is a sketch spontaneously made in 1993 by a security guard at Duke University to help us get to an auto repair shop in Durham. Below is a sketch of London I solicited from Janine Eber in the course of my dissertation research in 1970. I discuss the security guard's map in Denis Wood, Ward Kaiser, and Bob Abramms' Seeing Through Maps: Many Ways to See the World *(ODT, Amherst, 2006, pp. 2-4); and Janine's map in Denis Wood and Robert Beck's "Janine Eber Maps London: Individual Dimensions of Cognitive Imagery" (*Journal of Environmental Psychology 9, *1989, pp. 1-26).*

Sealing the map's objectivity

Thus, by then I was able to see that the map *insisted on* being accepted, but not why it *was* accepted. That didn't happen until I started thinking about how people give and receive directions. "Think about what happens when you're stopped for directions," I asked in "What Makes a Map a Map":

First you listen carefully to make sure you not only know the destination being sought but understand the problems involved in getting there. Then you say, "Sure, you turn left at the light, you go straight up the hill, and you'll see it at the top on your left," looking, as you say this, to your auditor for his or her comprehension. If your words don't "take," you try again. Ultimately you get the assent you need, the eager repetition, you make your confirmation, you get the satisfied nod, the thanks, and the satisfaction of watching the car make the appropriate
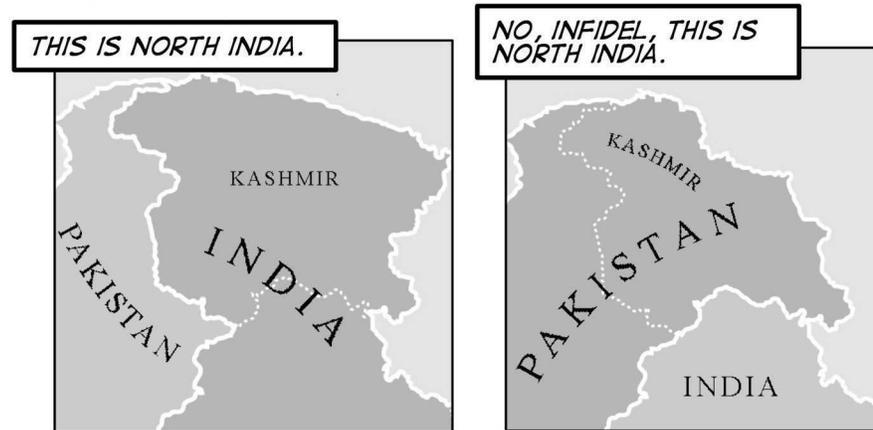
Figure 3. Here is a pair of contrasting consensual maps, showing the Pakistan-India-Kashmir region from, at left, an Indian perspective, and at right, a Pakistani perspective. John Krygier and I used these in our comic book, Ce n'est pas le monde, *that we presented last year to the 13th Annual Mini-Conference on Critical Geography in Columbus and at the NACIS annual meeting in Madison.*

turn. But until the other has *assented*, your directions have not become objective (they have not become objects in the world), they are still too caught up in the personal (they are still too idiosyncratic to make much sense to the other); but in the interpersonal situation, the two of you keep trying until the directions ... *make mutual sense*. It is only after the driver (the other) has accepted the directions as sufficiently in the world – that is, has *sealed* with his nod their objectness (their objectivity) – that he will act on them. Does this sealing assure their accuracy? Not in the slightest. All of us give and take wrong directions all the time. The sealing only assures the status of the directions as *objects*, that is, as *objective*, in the world.[24]

". . . almost everything about the map looks to us for acceptance."

In the *trans*personal world where maps as more or less permanent, transmissible descriptions of territorial relations find their peculiar utility, this form of validation is unlikely if not inconceivable. Where mapmakers have not been smeared into institutional facelessness, or raveled into complicated layerings of multiple authorship, they live in another city or another century.

What is it, then, about a map produced in such a way, or at such a time, or in such a place that compels from us the attention (and usually the assent) that my auditor gave me? What is it about the assemblage of marks that ... *looks to us for acceptance?* In fact, almost everything about the map looks to us for acceptance. The title – what is a title but the map's *tilted head* asking, "*Get it? This is Asia ...*" – legend box, map image, text, illustrations, insets, scales, instructions, charts, apologies, diagrams, photos, explanations, arrows, decorations, color scheme, type faces, all are so many assurances, so many signs (*of gesture, eyes, cheek color, posture*), chosen, layered, structured, to frame a discourse, to achieve winning speech.[25] But as Fels and I had pointed out years earlier, the code works beyond these self-evident schemes of organization. The presentational code acts on the map as a whole, *at every level.* The mask covers more than the forehead, it infects everything, it determines the costumes, poses the body, picks the party. In the transpersonal universe, the mask is the unavoidable presence that at once *permits* the map to stand apart from the unknown heads and hands that brought it into being, but also that tells it *how* to do this. Without the mask the map collapses into a jumble of marks (it is not even a sketch), it is crumpled up, thrown away (*the directions are ignored*). *This*

EXTRASIGNIFICANCE

EXTRASIGNIFICANT CODES

Thematic
Topic
Historical
Rhetorical
Utilitarian

MAP

INTRASIGNIFICANT CODES

Iconic
Linguistic
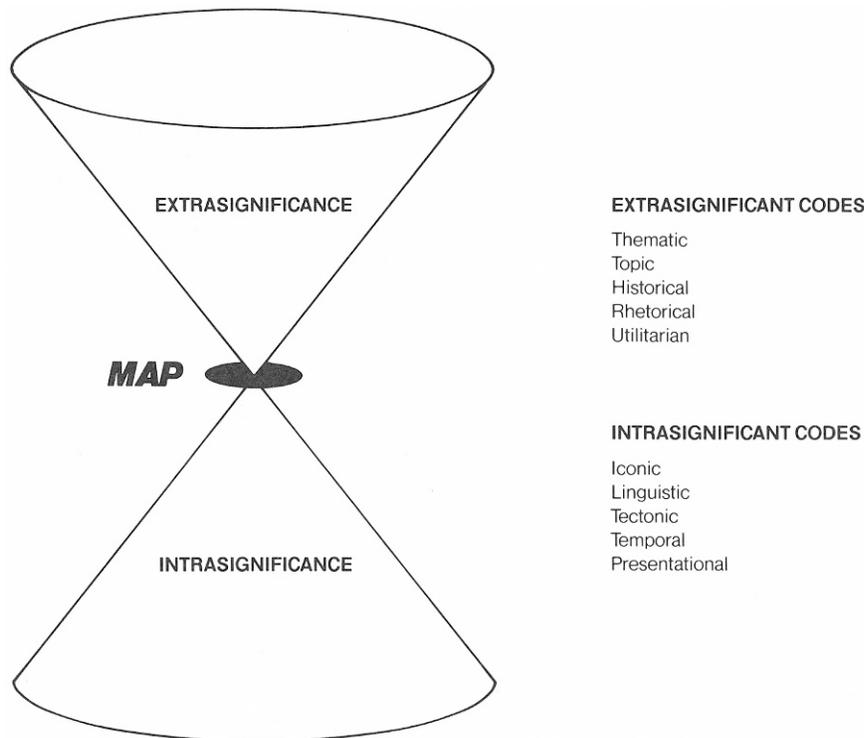Tectonic
Temporal
Presentational

INTRASIGNIFICANCE

*Figure 4. John Fels and I saw the map as a focusing device between the domains of extra- and intra-significance: the map gathers up the constituent signs governed by the codes of intra-signification so that they will be able to act as signifiers in the sign-functions governed by the codes of extra-significa-tion, which specified them in the first place. We first discussed these codes in our paper, "Designs on Signs: Myth and Meaning in Maps" (*Cartographica 23 *(4), 1986, pp. 54-103).*

is the mask no map goes without. *This* is the mask that *seals* the map, that provides the transpersonal validation that ensures the map's … *objectivity* (that is, its independence as an object in the world).

The mask seals the map in the transpersonal world

If we return, then, to the typology of maps I'd worked out for my dissertation twenty years earlier (Figure 1), we can see that only the external standard map unambiguously "stands apart from the heads and hands that brought it into being." The rest of the types are necessarily, essentially, or more or less *stuck*, either *in* the heads, or *to* the heads and hands responsible for them. This is self-evidently true of the internal maps. But it is hardly less true of external individual mental maps. In fact it is *precisely the subjectivity of experimental sketch maps that we value*, the *only* reason we solicit them. And it is more or less true of external consensual maps, more true as they are perceived to be "self-interested and biased" (that is, attached to their creators), and less true as the perception of their "objectivity" increases (of course the mask changes correspondingly). To put this in other words, only the external standard map wears the mask that no map goes without, and only the external standard map is what we are used to calling a map.

   Nor can the mask be put on *after the fact*. This is because the mask is not merely, or even especially, the neat-line, legend, title, scale, and so on, but the way all of the marks – *all of them together* – have been orchestrated to achieve the map's appearance of independence, of being free of any maker, of being objective (and so mythic). For this reason neither an

experimental sketch map nor a sketch map made in the throes of conversation (dependent on speech for its sealing) can wear the mask, and an attempt to put it on only produces the grotesque (Figures 5). To wear the mask the map would have to be redrawn from the beginning with the mask in mind.

Let me try to recapitulate the main points of this messy argument (I make no apologies: it's hard going). First, I'm arguing that maps are a discourse function of the type Barthes termed myth, that is, maps are images of the world that proclaim their objective neutrality, an important source of their authority.[26] Secondly, I'm arguing that the proclamation of their objective neutrality is *sealed* by an orchestration of marks carried out under the presentational and rhetorical codes, and I've called this orchestration "the mask *no* map goes without." Thirdly, I'm concluding, because they do not proclaim their objective neutrality (if anything, quite the contrary), that neither experimentally generated sketch maps nor sketch maps in general are maps. Not only do I feel that this conclusion is warranted, but I'm confident that the historical record supports it. People save maps. They take care of them, they horde them, they catalogue them, they pile them up in libraries. People throw sketch maps away. Of the huge number we might imagine has been made – that so many authors are so fond of describing being sketched in sand and snow and on scraps of paper – almost none remains. Those that haven't been blown away by the wind have been tossed in the waste basket.

And why not? The effort to orchestrate the marks required to proclaim a map's objective neutrality is a demanding one. Because of this, maps are repositories of immense loads of horded knowledge, energy, ingenuity, craft, and labor. Consequently maps are precious. People everywhere recognize this and cherish maps because of it. Sketch maps embody little if any of this load and are therefore comparatively worthless. People everywhere recognize this too, and because they do, they throw sketch maps away. But the difference in value is epiphenomenal. It's their attitude that ultimately sets them apart. The sketch map comes into the world naked, "subjective" and expressive. The map comes masked, "objective" and mythic. "Myth," Barthes reminds us, "is always language robbery," stealing the ostensible subject of a map to naturalize *through it* something else, as the North Carolina highway map naturalized the state through its apparent interest in roads.[27] All primary expression can fall prey to myth, Barthes argued: "Nothing can be safe from myth. Myth can develop its second-order schema from any meaning."[28]

How map art takes the mask off

While no meaning can resist capture, it is possible to turn the table. Barthes suggested that "The best weapon against myth is perhaps to mythify it in its turn, and so to produce an *artificial myth*: and this reconstituted myth will in fact be a mythology. Since myth robs language of something, why not rob myth? All that is needed is to use it as the departure point for a third semiological chain, to take its signification as the first term of a second myth."[29] Since mythologies highlight the mythic character of myth, they rob myth of its "objectivity," that is, of its claim to represent the world: mythology peels off the mask of myth.[30] *This is precisely the tack most commonly taken by artists working with maps*.

It may be useful here to look again at the one art map Denil selected from the many I mentioned, *The World at the Time of the Surrealists*.[31] While I noted in a footnote that the artist of this widely reproduced map is unknown, it is actually not impossible to hazard a guess that it was the poet

"The sketch map comes into the world naked, "subjective" and expressive."
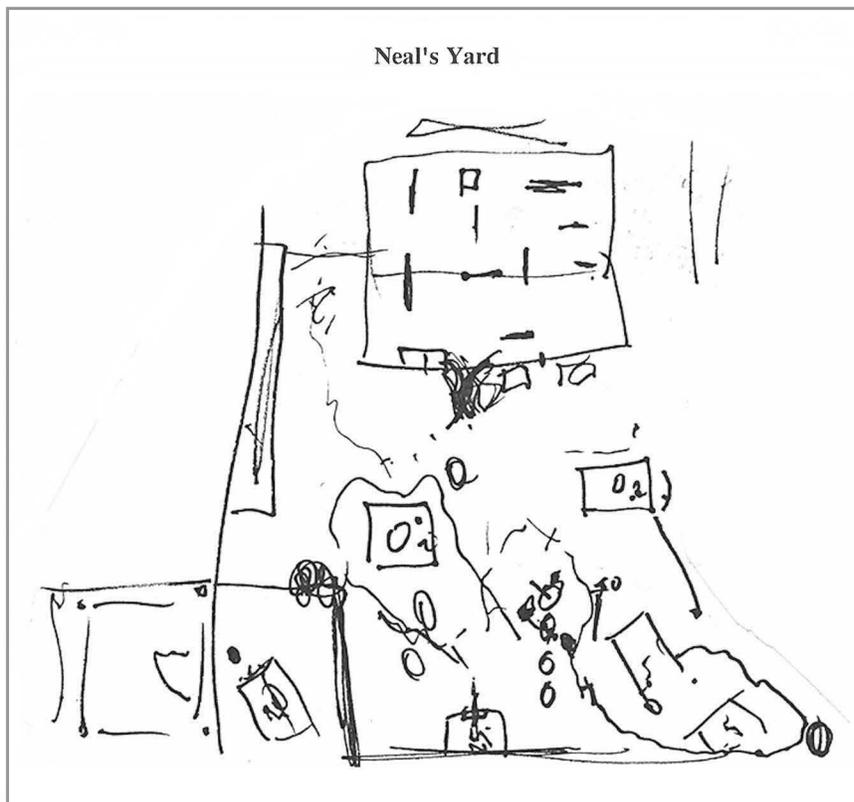
Neal's Yard

*Figure 5. At the top is a sketch of Neal's yard that Kelly spontaneously made to help me understand a game he and Neal had invented. Its independence was sealed by things we said to each other as he sketched, and by looks and gestures. Below, his sketch tries to put the mask on after the fact. It's merely grotesque. The sketch is the subject of my paper, "What Makes a Map a Map" (*Cartographica 30 (2&3), 1993, pp. 81-86).*

Paul Eluard. At the time Eluard was the managing editor of *Le Surréalisme au Service de la Révolution* for whose pages the map had been originally intended, along with the rest of the contents of the issue of *Variétes* in which the map finally appeared; and, in fact, together with André Breton and Louis Aragon, Eluard edited this special issue of *Variétes*. Circumnavigating the globe in 1924, Eluard, joined by his wife Gala and Max Ernst, had spent time in Southeast Asia and the East Indies where he had been powerfully affected by the horrors of Dutch and French colonialism. Eluard recorded his route on a map, *Les Cinq Parties du Monde, Planisphère, Comprenant toutes les Possessions Coloniales*, a classic of the era that displayed on a Mercator projection, English possessions in yellow, French in pink, Dutch in orange, Italian in mauve, and so on.[32] This map must have presented an irresistible target to the increasingly anti-colonial Eluard who closely anticipated Barthes' method for mythologizing a myth: Eluard traced over the mythic *Cinq Parties* with its "*toutes les Possessions Coloniales*" and used it as the departure for a third semiological chain that erased not only (as is usually noted) the United States but *most of Europe* (of France only Paris survives); that radically increased the size of the South Sea islands that Eluard believed most capable of breaking the European hegemony; and that replaced the old equator with one that approximated the route of Eluard's circumnavigation. Personalized, Surrealized, the world map of colonial possessions had its pretense of representing the world stripped from it. Its status as myth had been made clear. The mask had been pulled from its face.

". . . it is hard to imagine the Surrealists exploiting the presentational code to connote trustworthiness or, for that matter, any other detested bourgeois value."

Where experimental and other sketch maps fail to put the mask on, *most art maps strip it off*.[33] Denil's presumption that he and artists like Eluard make maps the same way is like saying that they both use their hands to do so. It's true, but gormless. It ignores the towering divide between their attitudes toward the world. As Denil himself fully acknowledges, the maps Denil makes as a professional cartographer are as fully masked as the colonialist map that Eluard unmasked. I'm looking at the maps of the *Vilcabamba-Amboro Conservation Megacorridor*, *Current Status*, and *Ten-Year Outcomes* that Denil made as a cartographer for Conservation International.[34] These maps have fully exploited the potential of the presentational code to connote trustworthiness, and I have no doubt that they are the hard-won results of painstaking efforts at marshalling the best and most relevant data that can be brought to bear in the most powerful way on how best to mitigate threats to biodiversity in the region and the world.[35] Trust, however, was hardly an appeal Eluard would have been likely to make. Trustworthiness was never a value of interest to Surrealism. If anything, one would imagine the contrary to have been the case, that Eluard and his collaborators hoped first to have encouraged a kind of vertigo in anyone contemplating their map, a disorientation, a puzzlement, perhaps a dawning wonder. "We believe in a new underground counter culture," Werner Spies quotes a Surrealist declaration with reference to this map, one "that will disrupt History and break the ludicrous grip of Fact."[36] No, it is hard to imagine the Surrealists exploiting the presentational code to connote trustworthiness or, for that matter, any other detested bourgeois value.

Nor would trustworthiness seem to have been much on the mind of Mona Hatoum, whose 2003 *Map* I also discussed. Composed of a ton-and-a-half of clear glass marbles spread across a slick concrete floor, *Map* would seem almost the embodiment of *un*trustworthiness, not only shape-shifting with every change of light, but threatening to send flying anyone who would dare to step on it. Like Eluard, the Palestinian Hatoum – born to a people without a country – takes a mythic map as a point of departure

for a third semiological chain which, as mythology, strips the myth from the map of the world and holds it up to ask whether it is a one we want to live by.[37] Although art maps do not enter the world naked as sketch maps do, neither do they enter it masked as maps. Rather they come with masks in hand, masks pulled from the face of maps they've unmasked. In so doing they join sketch maps on the same side of the great divide. On their side, open speech, claiming no more for itself than to be spoken. On the other, alienated speech proclaiming its trustworthiness and demanding to be taken as true.

Endnotes

1   Mark Denil, "Opinion Column/Denis Wood's article "Map Art," *Cartographic Perspectives 55*, Fall, 2006, pp. 4-5. My "Map Art" article appeared in *Cartographic Perspectives 53*, Winter, 2006, pp. 5-14.

2   The other articles in the Winter 2006 issue were Dalia Varanka's "Interpreting Map Art with a Perspective Learned from J. M. Blaut," kanarinka's "Art-Machines, Body-Ovens and Map-Recipes: Entries for a Psychogeographic Dictionary," John Krygier's "Jake Barton's Performance Maps: An Essay," and the catalogue of map artists I'd compiled. The issue was introduction by Denis Cosgrove's "Art and Mapping: An Introduction."

3   And this despite the fact that since Dalia Varanka discussed Warhol's map in her article, the Warhol map actually appeared twice in the issue, on pp. 19 and 72. As to the map's iconicity, see, among others, O. E. Clark, ed., *100 Maps: The Science, Art and Politics of Cartography Throughout History* (Salamander, London, 2005), pp. 188-189.

4   Steven R. Holloway, an untitled map from a series of four "reflecting on North 47° 56' West 110° 30' and on lines by Korzbsky," *Cartographic Perspectives 32*, 1999, cover.

5   See especially Barthes' long essay, "Myth Today," in his *Mythologies* (Hill and Wang, New York, 1970 [1957]), pp, 109-159.

6   Denis Wood and John Fels, "Designs on Signs: Myth and Meaning in Maps," *Cartographica, 23*(3), Autumn, 1986, pp. 54-103.

7   The Cooper-Hewitt's programming literature refers to this lecture, given October 5, 1992, as "The Power of Maps: Legitimation, Intimidation, Subjugation," but it was immediately published as "How Maps Work," *Cartographica, 29*(3&4), Autumn/Winter 1992, pp. 66-74.

8   This was the fifth Yale-Smithsonian Seminar on Material Culture. I gave the paper March 6, 1993 and it too was immediately published in *Cartographica, 30*(2&3), Summer/Autumn, 1993, pp. 81-86. For a related treatment also see the paper I wrote immediately afterwards, "The Fine Line Between Mapping and Mapmaking" (*Cartographica 30*(4), Winter 1993, pp. 50-60), where I push these ideas into an historical framework.

9   The critical paragraph was: "When I say 'objectivity' I want you to hear the root of the idea that is buried in '*object*,' that is, in *ob*, toward + *jacere*, to throw; or the even deeper idea implicit in the Indo-European root *ye*, that is, simply ... *throw*. Somehow the sketch map has not yet been sufficiently ... *thrown away*, is not yet the *jaculum* of *ejaculate*, is still too connected, is still too tied to the subject who created it. The kind of detachment I want to suggest is less that of *cool, indifferent*, or *disinterested*, and more that of the separation that gradually occurs as kids grows up, as they become less and less attached to their parents. We finally find ourselves saying, 'He's his own person now,' and, 'She's her own person now,' acknowledging – in the very enunciation

– that they weren't before. And the sketch maps still haven't broken away, are still too closely tied to their creators (to their parents). They haven't become objects on their own, they're not independent (they haven't become ... *people*)," "What Makes a Map a Map," ibid., p. 82. My idea of what "objectivity" means has continuously evolved over the years. My use of quotation marks throughout is intended to acknowledge this.

10 My dissertation was published in two volumes as *I Don't Want To, But I Will*, Clark University Cartographic Laboratory, Worcester, Massachusetts, 1973. Among others, Barbara Buttenfield worked on the graphics.

11 Kevin Lynch, *Image of the City*, MIT Press, Cambridge, 1960, p. 143. In my dissertation, I discuss this passage at length, pp. 497-501.

12 I called the first the Single Element Veridicality Analysis, and the second the Grid Analysis. In the first I locked all the sketch maps onto some common feature (say Euston Road) and examined variation among other features (Oxford Street, say, or the Thames). In the second I followed the path taken by Waldo Tobler in "Medieval Distortions: The Projections of Ancient Maps" (*Annals of the Association of American Geographers 66*, 1966, pp. 351-360).

13 My dissertation was self-consciously geosophical. "Geosophy" was coined by J. K. Wright in "*Terrae Incognitae*: The Place of Imagination in Geography" (*Annals of the Association of American Geographers 37*, 1947, pp. 1-15). Wright defined geosophy as the study of geography from any and all points of view: "… it covers the geographical ideas, both true and false, of all manner of people – not only geographers, but farmers and fishermen, business executives and poets, novelists and painters, Bedouins and Hottentots – and for this reason it necessarily has to do in large degree with subjective conceptions."

14 My use of quotation marks here is to reflect the continuous evolution in my thinking about the meaning of "subjective" too.

15 The evidence against maps in the head has been accumulating ever since the idea gained real currency in the 1960s. I really like the way Erik Jonsson puts it in his *Inner Navigation* (Scribner, New York, 2002): "Part of the trouble we have when we try to look at our cognitive map comes from the 'map' label, which is misleading. For our cognitive map is not a map: it does not look at all like a map. It would be better to call it our 'awareness of our familiar environment'" (p. 27).

16 See Ian Hacking's wonderful *The Social Construction of What?* (Harvard University Press, Cambridge, 1999) for an overview.

17 Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life* (Princeton University Press, Princeton, 1985). Their description of Boyle's program for establishing matters of fact through the social construction of assent, and the material, literary, and social technologies Boyle mobilized to do so (including the social construction of the open laboratory, the development of a self-consciously modest and functional style of writing, and the control of forms of discourse) are utterly convincing. Only the substitution of a few terms are required to turn their book into one about the social construction of geographic facts.

18 That maps worked to naturalize the status quo explained why maps changed over time, not due to any sort of "progress," but because the status quo was continually evolving.

19 Barthes' "Myth Today," was seminal, but his *Elements of Semiology* (Hill and Wang, New York, 1967 [1964]), *S/Z* (Hill and Wang, New York, 1974 [1970]), and *The Fashion System* (Hill and Wang, New York, 1983 [1967]) were also essential.

20 Critical here was Eco's *A Theory of Semiotics* (Indiana University Press, Bloomington, 1976). Greimas' writings were finally collected in *On Meaning: Selected Writings in Semiotic Theory* (University of Minnesota Press, Minneapolis, 1987 [1970-83]).

21 Wood and Fels, op. cit.

22 Ibid., pp. 70-71.

23 It's worth noting that "How Maps Work" opened with a list of *various* masks worn by different maps. It concluded with, "Each map wears its mask, yet beneath them all lies still another, the mask *no* map goes without" (p. 66).

24 "What Makes a Map a Map," op. cit., p. 82. Note that this idea of "objectivity" carries no burden of correspondence theory, nor is it concerned with bias or disinterestedness. Its sole concern is the object-status of the thing in the world. Jack Goody writes about this kind of objectivity as a general property of *writing*: "Writing puts a distance between man and his verbal acts. He can now examine what he says in a more objective manner" (in Goody's *The Domestication of the Savage Mind*, Cambridge University Press, Cambridge, 1977, p. 150). More recently David Turnbull has recast Goody's argument in an historically more subtle form in a discussion of Pacific navigation traditions (in Turnbull's *Masons, Tricksters, and Cartographers*, Routledge, London, 2000, pp. 151-153). This kind of objectivity is not quite, but close to, what Allan Megill writes about as "the dialectical sense of objectivity" in his "Four Senses of Objectivity;" that Johannes Fabian writes about as "ethnographic objectivity" in his "Ethnographic Objectivity Revisited: From Rigor to Vigor;" and that Andy Pickering describes in his "Objectivity and the Mangle of Practice," all three in the collection Megill edited called *Rethinking Objectivity* (Duke University Press, Durham, 1994).

25 Fels and I, in a text in press (*The Natures of Maps: Cartographic Constructions of the Natural World*, ESRI Press, Redlands, 2007) identify these aspects as the *paramap*, a term we've adopted from Gérard Genette's work on the paratext. See his *Paratexts: Thresholds of Interpretation* (Cambridge University Press, Cambridge, 1997 [1987]).

26 The essential authority remains the police power of the state.

27 The Barthes quote comes from his "Myth Today," op. cit., p. 131. In our forthcoming text, op. cit., Fels and I examine the naturalization of culture through the apparent interest of many maps in, among other things, earthquakes, ecosystems, the earth seen from space, parks, the range of pin oak trees, and so on.

28 "Myth Today," op. cit., p. 131.

29 Ibid., p. 135.

30 As I explained in my map art paper, this is most often made evident by the elimination of the phatic signage commonly associated with maps, though the opposite tack can be taken too and the signage can be exaggerated. The extreme here would be all phatic signage, none under the control of the topic or temporal codes, as in Lewis Carroll's well-known *Ocean-Chart* from *The Hunting of the Snark.*

31 *Le monde au temps des Surréalists*, published as a double-page spread in a special issue, *Le Surréalisme en 1929*, of the Brussels journal, *Variétes*, June 1929, pp. 26-27. This issue of *Variétes* was reprinted in 1994 in the Collection Fac-Similé from Didier Devillez Editeur, Brussels. Incidentally, in my original "Map Art" piece I claimed that the map was published without a neatline, as indeed Patrick Waldberg reproduced it in his *Surrealism* (Thames and Hudson, London, 1965, p. 24) and I reproduced it in *The Power of Maps* (Guilford, New York, 1992, p. 183).

This was an error. The map very much had a neatline in *Variétes*.

32 This map, *Les Cinq Parties du Monde, Planisphère, Comprenant toutes les Possessions Coloniales*, A Taride Editeur, 18-20 Boulevard St. Denis, Paris, with Eluard's route marked by himself in ink, is currently in the possession of the Musée d'art et d'historie, in Saint-Denis (Paris). While the conclusion that Eluard may have authored *Le monde au temps des Surréalists* is mine, the grounds for thinking so lie in the story put together by Robert McNab in his *Ghost Ships: A Surrealist Love Triangle* (Yale University press, New Haven, 2004). McNab reproduces *Les Cinq Parties* on p. 58, and *Le monde au temps des Surréalists* on p. 211, once again without the neatline.

33 Some art maps don't put the mask on. In fact map artists exploit a range of strategies, but none results in the mythic discourse characteristic of a map.

34 These can be found in *ESRI Map Book Vol. 17: Geography and GIS – Sustaining Our World*, ESRI Press, Redlands, 2002, p. 25. Details of the maps are online at www.esri.com/mapmuseum/mapbook_gallery/volume17/conservation12.html.

35 What Denil's maps naturalize is an idea of *nature under threat*. Fels and I devote a chapter to an analysis of this myth (in our text in press, op. cit.), which we see as one of eight different "natures" maps have helped to construct.

36 In his "Preface" to McNab's *Ghost Ships*, op. cit., p. ix. Spies is the world's reigning expert on Ernst.

37 In particular Hatoum's map strips away the pretense of institutional stability, the establishment of which is the principal goal of, among others, national mapping agencies.