

3 Designing for mysterious encounter

Three scales of integration in deep mapmaking

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Introduction

In this chapter, I examine the role of *integration* in making deep maps. Deep maps integrate at three scales. At the macro scale, they integrate two major geographic epistemologies: abstract knowledge of a place (in the form of big data) with embodied knowledge about that place; or, distanced facts with the poetry of lived experience. At the meso scale, they integrate entities, both natural and cultural, into hybrid forms indicative of the Anthropocene. Designing a digital platform such that users are privy to *how* meetings among material and mental entities happen in place is to showcase a geographical application of assemblage theory;¹ these “meetings” are what I am terming the meso scale of integration. And at the micro scale, they integrate various media about a specific place (like maps, videos, and sound recordings) with each other in a single platform. Two other sections augment this chapter: one on the relevance of collage to deep mapmaking, and the other on how argumentation might function in a paradigm based in encounter.

The act of integration, at each of the three foundational scales, is an act of creation. Making a deep map is not setting out to represent reality, but to craft a portrait of place that at once engages the senses and the intellect. To do so requires an approach to design based on encounter. If reading a deep map is being open to suggestion, then making a deep map is to give opportunities for encountering, where rhetoric and position are communicated through the mystery of what content and visual forms might come next.

Macro scale

In her investigations into the history of enchantment in modern life, Jane Bennett reminds us of something Max Weber wrote. She paraphrases him thus: “the enchanted world is always in the process of being superseded by a calculable world, [but] rationalization never comes out even with nothing left over.”² Weber was suggesting that no matter how much reason you apply to something there will always be parts of it that are magical and mysterious. There are always questions left over, always something new to solve. To think that progress moves toward a state of complete mastery or understanding, therefore, is a fallacy. It is even

DOI: 10.4324/9780367743840-3

possible that the reverse could be true, that the rationalization process tends to produce more and more mystery by continually pushing the horizon of understanding a little farther out.

This “left over” mystery that we encounter as a by-product of enumerating, cataloging, calculating, and analyzing the world in the name of understanding it more thoroughly is an element on which deep mapmakers can focus their design efforts. At the macro scale of integration, deep maps are the application of big data to the study of specific places. This is a move toward knowledge of places that far exceeds the senses, though not one that forgets the senses. Deep maps are the wedding of distanced, abstracted information gathered *about* a place with intimate knowledge conjured *in* place. Though deep mapmakers will surely maintain that complete understanding of place is never actually possible, a unique contribution of any deep map is nonetheless to go “beyond the sensorium” of what one might phenomenologically ascertain *in situ*.³

The translation of tabulated data to dynamic cartographic portraits is the province of neogeography and information visualization, around which design paradigms and debates have blossomed.⁴ Making a deep map is different than making a map, though, a difference that is found in its insistence on integration at all three scales. Whereas information visualization focuses on the technics of harnessing data sets coupled with graphic solutions, a deep map needs a design principle divergent from cartography. Integration lies in the purview of method, and user interface design is at the heart of answering “how” one makes a deep map.

Mysterious encounter is a guiding design principle that could help accomplish the integration of data with embodied knowledge in the user interface platform. Intentionally organizing the tidbits of original source material about a place—the traditional process of which is detailed by Umberto Eco⁵—such that users make unexpected connections among the assets is to achieve one of the defining characteristics of a deep map. Note this is quite different than the researcher using a digital platform to perform her own queries in a behind-the-scenes tool.⁶ Designing for mysterious encounter is not about using the platform as a researcher’s sandbox, but is instead using the platform as a medium of communication and creation. It is world-building, more akin to crafting the scene of a novel than juxtaposing disparate informational assets.⁷

This serves two immediate purposes. The first is that users have the opportunity to experience a deep mapmaker’s vision without the pretense that it is a neutral or objective asset integration tool. While a successful deep map ought to invoke honest and critical understanding about the place in question, it need not operate under the belief that objective reality is being recreated. This leads to the second immediate purpose, or benefit, which is that the deep map can be brought into the fold of established digital humanities critique regarding content, technics, style, and authorship. There is no reason for an author to assume design neutrality, but rather the conversation is about how the authors wove together information about place, the worth of the authors’ creative interpretation, and the success or failure of the “informed speculation” thereof.⁸ Designing for mysterious encounter in deep mapmaking shares with fiction, therefore, an element of speculation. The

depth of a deep map is to extend past what can be mechanically positioned on a cartographic plane, and to do so requires the researcher to extend past what is traditionally held as safely defensible argumentation. Inasmuch as informed speculation is part of what deep mapmaking is, the creator of a deep map is mobile on the continuum between historical geography and the visual arts.

Meso scale

At this point it is worth moving into a discussion about why *mysterious encounter* is a theme with broader intellectual value in geography, and why I believe it fits so well in the cradle of the deep-mapping enterprise. Bennett's recalling of Weber—that enchantment in modern life is that which pokes through the dominant blanket of rationalization, a blanket that can never cover and explain all phenomena—has again recently been echoed by geo-humanists Hawkins and Straughan. They write that in geography “the aesthetic is embraced for its sensuous explorations of subjects, bodies and spaces through a focus on experiences that are in excess of rational thought.”⁹ They suggest that geographers concerned with dramatic changes in modern human-natural systems have turned this extra-rational realm. A prevailing way of reflecting devastating environmental changes has been to articulate how the earth's environments are now characterized by ubiquitous hybridization between biological and inorganic material systems with human technology and artifice.¹⁰ One of the prevailing metaphors for carrying out this work has been Deleuze and Guattari's *assemblage*, a concept not unlike network, but with an added connotation of process, as in there are forces doing the assembling process of bringing together the earth's (not so) latent material with human intention.¹¹

Describing the ways in which human and nonhuman entities come together to forge hybrid environments—like Richard Misrach's portrayal of Louisiana's cancer alley—characteristic of the Anthropocene has become an important approach for those who study twenty-first-century environmental issues.¹² This environmentalism has distanced itself from notions of pristine nature, and its practitioners instead try to expose environments for what they are now believed to be, using terms like “freakology,” “monsters,” or “industrial ecosystems.”¹³ Exposing and reframing the constitution of anthropogenic nature is a task well suited to the breadth of geographical study—combining physical processes with cultural interpretations thereof—and as such has been taken up by a range of scholars in and out of geography. Doing this kind of geography, though, is often most successful when it is place-based.

When entities come together to make these post-natures, something happens to the material reality of their constitution. As philosopher Graham Harman puts it, “shuffling objects into ever newer and stranger combinations, modernity creates monstrous unions between the most far-flung objects under the sun.”¹⁴ What kinds of strange objects are combined in (post-) modern environments? The Rocky Mountain Arsenal National Wildlife Refuge is a frequently cited example in environmental history—a former weapons manufacturing plant in Colorado that, because of its toxicity, is devoid of human habitation. It is, ironically, for

the same reason, therefore home to vast animal populations in one of the region's most successful wildlife refuges.¹⁵ Here the buried, hidden detritus materials used to make explosives live alongside deer, owl, and bear populations—a strange and indeed monstrous union.

Importantly, and to the main point, in assembling these seemingly unnatural relationships among objects and people there are constantly occurring *encounters* that do the work of creating new types of natures—or, to put it in the language of deep mapmaking—new types of places. What happens when two non-humans encounter one another? These types of encounters are meaningful if you believe that all the entities of the world—for example, people, glaciers, buildings—are composed by their relation to other entities. As geographer J.D. Dewsbury puts it, assemblage is “a process of putting together, of arranging and organizing the compound of analytical encounters and relations.”¹⁶

What assemblage theorists have not yet put their collective finger on, however, is translating this “process of putting together” into visual forms. They have also not yet developed place as an organizing principle for structuring and representing the assembling process.¹⁷ It is one thing to write about the history of the Rocky Mountain Arsenal, and another thing entirely to visualize the specifics of what moments of “encounter” look like in a spatial format. What does the moment of encounter look like—how is a profoundly new type of nature made in place—when a bear sniffs her nose at a ruined missile shell, or a honeybee gathers nectar from a cultivated field and brings it to a keeper's comb?¹⁸ Looking to the methods and techniques of deep mapmaking might help answer these questions.

Which objects and organisms become enrolled with one another to make hybrid entities has an *uncertainty* to it. If anthropogenic environment is your topic of study, then it makes sense that this uncertainty should find its way into the representations of new natures themselves. Deep mapmakers can intentionally design for this uncertainty such that users witness the encounters generative of hybrid environments. It is the meso scale of integration that brings entities in proximity with one another, and the deep map's adherence to place as a way of knowing is a snug fit with this environmentalist-intellectual project.

Collage and the meso scale

In a post-human world composed of “relations” among people, machines, and objects, the theme of encounter runs strongly. Encounter is also one of the defining characteristics of twentieth-century collage, which is about bringing “assets” into conversation with one another. In 1912, when Pablo Picasso and Georges Braque began making collages, they were practicing an ancient art form—some of the earliest forms of human creative expression involve bringing together varieties of found objects. But these moderns looked to collage as a reaction against a paradigm that saw painting as a “porthole” through which reality was viewed from a distance.¹⁹ Instead of a single plane that was a single representation from a single painter, the collage was tactile, quotidian, heterogeneous, and accessible. In short, it bridged the gap between life and art. The materials of everyday life

did the work of art, that is, they became the medium through which society was refracted and contemplated.

One comparison we can draw between collage and deep mapmaking, then, is the synthesis of heterogeneous assets. In early-twentieth-century collage these assets frequently included things like newspaper clippings, rope, photographs, tickets, and the like, which were all brought together into a shared frame. Over one hundred years later, in twenty-first-century digital humanities setting, the synthesis of heterogeneous assets also takes place within a frame, that of the computer screen. In each case the practitioner scours his or her environment for objects (e.g., newspaper clippings or data sets) and makes aesthetically or topically motivated decisions about what of those objects to include and how to arrange them in the frame.

The second shared characteristic between these two media is that they both, in different ways, strive to erase the distance between the viewer and the world. In collage, the artwork was not an approximation of life that conjured reality but was itself made from reality. The role of representation had changed. In painting—at least the painting to which Picasso was reacting—marks of paint on the canvas stood in for a part of reality, cueing the viewer to imagine or remember life events, object, or places. But in collage nothing stood in for reality, and so the thing being represented was much more abstract, a grander gesture, perhaps even “deeper.” Collage brought art into the same mode of reality as the viewers, connecting them to a material experience that was more phenomenological than intellectual.

Likewise, to make a deep map one must thrive in the liminal zone between reality and representation, where the line between the two is no longer a line but a mutating shape, where the riches of the body’s senses and the mind’s knowledge both make one wonder where mediation stops and life begins again. Deep mapping as such contributes to a fundamental humanistic-geographical act; it is an effort to describe places that are not one’s intimate own. It is to compile, artistically arrange, to guide, to collage.

Encounter is the thread that ties together the process of assembling digital assets in a deep map with the historic art of collage making. Makers in each of these media carefully select and arrange their objects such that the viewer might gain a sense of wonderment. The link back to Bennett’s enchantment is that non-human objects, like discarded weapons, deer, or honeybees in farm fields, cannot “encounter” one another without operating in an extra-rational ontology. There is a remainder, something unaccounted for that, as it turns out, is extraordinarily good at shedding light on the new environmental forms of the Anthropocene. They are slivers of openings into worlds that we do not see because we do not look for them. Nature in the Anthropocene has to be unpacked entirely because the material reality of ecological systems is changing so rapidly.²⁰ We need to start the research process from an askance view that seems to come from Weber’s extra-rationality, and designing for *mysterious encounter* in deep maps is one way to go about this research process, to start believing that what makes no sense together at first can become an ecological truth.

Weber’s “remainder” is the feeling, or mode, of enchantment that people tend to attach to places. Seeing the unexpected remainders of rationalization is a matter

of seeing unexpected encounters—of objects and events colliding in ways that carry viewers to a deeper understanding of the place in which these encounters unfold. After all, postmodern natures must happen somewhere, and deep maps have the potential to grasp these “somewheres.” They can visually articulate how the hybridizing geographical reaches of the postmodern are so radically different from the Arcadian dream of isolated mountain pastures, unaffected by and unconnected to the rest of the world. At their best, contrary to Arcadia, deep maps use place not as a bounded locale, but as a loom that weaves together disparate elements inside a frame.²¹

One conclusion to draw from this line of thinking is that the power of a deep map—and ultimately its usefulness in the study of place—is its use of a single platform to integrate the elements of a place that are often siloed into rational categories of analysis. Drawing on Dewsbury again, the French *agencer*—incorrectly related to the English “assemble”—is more accurately translated “as a way of bringing forth and mapping out a territory at the same time.”²²

For deep mapmaking, “bringing forth” is the process of assembling, or designing a platform that integrates digital assets about a place in a way most conducive to mysterious encounter. If “bringing forth” a territory (or place) is the first part of this provocative equation, then what about “mapping out” that place? This leads to a question about what it means to perform the act of mapping, in particular, when making a deep map. So far, I have focused on the viewer, and designing digital platforms so that he or she can witness the meeting of various constitutive elements definitive of a place. But what from cartography can be applied to the making of a deep map? In Dewsbury’s translation of Deleuze’s *agencer*, this mapping out of the territory is connected to nineteenth-century colonial projects in which mapping out a territory was to control and restrict the movement of goods, nature, and people, leading to unknown levels of social crises.²³ Drawing precise measurements and exact relative locations on paper—or at least the attempt to do so—tended to erase many geographic realities existing on the ground all over the colonized world. Colonists used maps as *reasons* for political ideology and action (e.g., blank spots), rather than recognize them as *products* of political ideology and action. Deep mapmakers do not need to rely on this part of cartographic history and can build graphic forms for spatial representation that jettison any strict adherence to precise measurement when that precision severs indigenous or alternative political spaces. What these graphic forms look like and how they function with respect to map users is one of the charges that deep mapmaking has opened.²⁴

Micro scale

How do you make a deep map? By integrating “heterogeneous elements,” just like in a collage.²⁵ Is it up to the user to wade through the collage of information and make sense of it? On the surface this seems to be what deep maps are good at: “simultaneous representation,” but not argument. Text is the medium that most humanist scholars use to convey intellectual distillation. When deep mapmaking is brought into the purview of the humanities, then, a problem surfaces that

connects back to the visual excesses of capitalist culture highlighted by the French artist and philosopher Guy Debord. He looked at the overflow of visual imagery in society as an undesirable trait of masking reality—what he called a “spectacle” far removed from reality. For our discussion about argument, therefore, the roots of a challenging paradox were planted.

On the one hand, deep maps are excellent at organizing encounters, inviting users to synthesize the heterogeneous elements of the deep map, presumably in a nearly infinite variety of ways. But on the other hand, I argue it is direct argumentation that can keep deep mapping away from the trap of Debord’s spectacle. The problem is that direct argumentation is better suited for the textual medium because, again, it is a distillation, a discovery of a golden nugget of thought that can be explained with words. Academic discourse is founded on this type of communication; the most impactful knowledge has historically most often been that which can be explained with words. The process of making a deep map, then, suggests that we need a new type of direct argumentation. How are visual arguments made? In the history of art, this is one question that seems to follow from Debord’s critique.

Paramount here is relevancy; making a deep map is not about piling on details and features until one’s technological capacity is maxed out. If this were the case, then a deep map would be synonymous with a technological treadmill, constantly responding to the technology industry’s capitalist advances.²⁶ Integration of media types has become a form of knowledge production in and of itself, and I believe deep mapping will benefit from keeping a critical stance toward this practice. Within digital humanities, examples of media integration include photography, text, and cartography; sound, databases, and videos; and virtual reality, sculpture, and the internet of things. My concern as a digital geo-humanist is that the technics of a project have the capacity to mask its substantive purpose. But what is at the heart of the “technics” of a digital humanities (DH) project—what is doing this potential masking? More often than not, the core of the technical challenges involved in making a DH project stem from the untranslatability from one media type to the next. Translating a database into a cartographic picture—possibly the most straightforward of translations—is still not a given tool in the skillset of DH scholars or even geographers. There is a plethora of GIS tutorial mini courses offered by academic libraries around the world, week-long mapping workshops going on every month, and advanced degree programs offered by hundreds of universities, all for the sake of gaining proficiency in this translation from dataset to map. The point is that if tools as “old” (going back to the 1960s) as GIS-like programs are not automatically a language spoken fluently by spatially minded academics, then how are less common integrations among other media types supposed to happen?²⁷

Integrating media types allows us to imagine what else might happen when these two media are joined. While a major coup in mixed media art—deserving all accolades and encouragement—deep mapmakers should not uncritically borrow this endgame. In other words, the criteria used to make value judgements about mixed media art should not be the same as those used to make value judgements about a deep map. This is part of the challenge of deep mapmaking: it is still first

and foremost a geographical practice that seeks to make statements about the becoming of place, and—as my own topical urgency—the material constitution of the Anthropocene. Deep mapmaking borrows the approach of the visual arts to achieve this end.

Argument through encounter

In the DH there is an ongoing tension between encounter and argument. Like many tensions in scholarly practice, it is mostly a productive one, where on the one hand DH teams are focused on making pointed statements in their fields, and on the other are keen to take advantage of visual–digital media that allow users to playfully explore. It is by now a longstanding and well-documented tension, with most DH projects exhibiting both of these characteristics in varying dosages.²⁸ The commitment to make a deep map is parallel to using encounter as a *means* of argumentation in one’s final representation. The type of deep mapping advocated for in this chapter is that practitioners take command of encounter and direct it from perceived serendipity to a carefully designed experience. Encounter does not only need to be a random coming together of elements in a digital platform but can also be—as I refer to it here—something that is intentionally assembled by the deep mapmaker. Less a cartographic technician, then, and despite its title, the deep mapmaker is really a designer of semi-fictional, speculatively informed worlds that illuminate one’s place of study.

Deep maps implicitly suggest multiple responses rather than explicitly stating an argument for a truth. They are a response to the age of big data, a series of design solutions to a radically expanding base of primary documentation. The way one structures the archive of a deep map yields representations of places that guide users toward potential conclusions about the places themselves. Making the base structure sing—that is, coordinating its emergences to the graphic interface at just the right time based on a user’s input—is one of the most important questions one can ask about methods in deep mapping. Deep map content is seldom experienced linearly, and because of this, deep mapmakers operate in a medium where the moments of critique and the creation of knowledge happen much more subtly. Authorial decisions and intentions tend to become masked in the digital experience itself more than they would be in a typical text-printed argument. It is important that a user remain empowered to make decisions about encountering the deep map to keep her aware of the curated—and therefore subjective—nature of the deep map.

Where does one find authorial and/or curatorial position, rhetoric, and argument in a deep map? Because deep maps wed big data with place, they run the risk of appearing like neutral archives. When making a deep map, voice is never left out, but can be harder to pinpoint because readers are generally not accustomed to deciphering the rhetoric of latent archival positions. Deep mapmakers present arguments for something, but to an audience that is not literate in big data wrangling. Even what may appear as a listing of information about one’s place of study is always more than a catalog or a digital memory bank; it is imbued with interpretation.

Making a deep map could be interpreted as the big data versions of geographical description, harkening to the ancient practices of travel writers like Strabo of Amasia.²⁹ However, in his critique of regionalism as a scientific practice (a regionalism in the long lineage of Strabo), Kimble wrote:

at best, a regional study can be only a personal work of art, not an impersonal work of science—a portrait rather than a blueprint. As such, it can have substantial value, but its value will lie in the realm of illumination and suggestion rather than of definitive analysis and synthesis.³⁰

Attaching a graphic user interface to a database takes the deep mapmaker beyond curating an archive, or as Kimble would say, beyond the “blueprint.” Argumentation in deep maps is in the way it illuminates and suggests—between the extreme subtlety of an archive (arguments that are hard to detect) and the explicit statement of a text (arguments that are intentionally articulated). It thus—along with other types of visual digital productions—requires a new type of criticality, an interpretive zone that walks the line between provocation and organization of fact. The challenges involved in peer reviewing digital humanities projects are not unrelated and have begun to be documented.³¹

Conclusion: political economy of visual representation

To conclude, I return to Guy Debord and his famous work *The Society of the Spectacle*. Here, Debord introduced the concept of the “spectacle” as a way to critique what he interpreted as a representational layer that blanketed lived reality. As he put it, “life is presented as an immense accumulation of spectacles. Everything that was directly lived has receded into a representation.”³² This historical moment (the 1960s, though no doubt even more intensely since) is problematic for Debord because the “technical apparatus” of representations cannot be neutral; it is part of a mass media machine that only stands to gain from constructing images, replacing tactile encounters with visual experiences either tailored to or hijacked by the non-neutral image makers.

Debord’s observations about the role of visual representation in modern economies have been a lasting critical position because of its apparent pervasiveness; examples seem to abound. A billboard seen from the driver’s seat of an automobile on a highway reconstitutes what used to be one’s tactile relationship with place as distanced and exclusively visual. Visiting national parks is often reduced to a photograph taken near a parking lot with a preformatted scenic overlook.³³ Human socializing is performed ad nauseam on an ever-shifting platform of websites and mobile applications specifically designed to extract data.³⁴ Television and YouTube stream from cell phones. As Debord would likely say today, these and countless other instances where designed images become the majority of one’s direct experience have created a new kind of objective reality defined by commercial interest. To normalize the billboard, the tourist snapshot, sharing online photographs, and the ubiquitous and infinite access to moving images is to live in a capitalist sheen, a

reality equally real, yet planted in extractive modes of production and trade. Living in this sheen, or “spectacle,” also engenders new kinds of embodiment, less about putting one’s body in direct contact with physical–geographical formations and more about the body as a vessel for the seeing eye and participating economic will.

Where does this leave our discussion of deep maps and integration? The sets of productive questions to be gained from Debord are: (1) How, given that deep maps are decisively visual and representational, does a deep mapmaker resist contributing to the political economy of the spectacle? How, through the design process, can one produce a digital sheen positioned counter to the waves of digitization brought on by the profit motives of Silicon Valley and all the tech valleys of the world? Are there any innocent tools and means of delivery of a deep map? (2) How is the deep map user meant to position herself psychologically and corporeally on the continuum of digital material? If a successful deep map evokes a heightened sense of place, could one conceivably be more “in place” by engaging with a deep map than by being there in body? How would one know if they are learning more about a place through its representation in a deep map or by being there in situ? Here it is beneficial to look again to Jane Bennett, who, in her work after *The Enchantment of Modern Life*, considers the unseen power of objects and how they affect one’s body and one’s subjectivity.³⁵ I would argue, and I think Bennett would argue, that if something like a deep map were helpful in seeing new ecological realities, then its ability to create place would be advantageous in a progressive politics for the Anthropocene.

Falling into the traps of Debord’s spectacle might well be avoided by a seemingly simple move, which is to have already distilled one’s motivations for making the deep map in the first place. If the purpose of the deep map is to answer a historical or theoretical question, for example, then the decisions made while building the deep map should necessarily align with those aims. The specialty of the deep map is its promise to integrate data about a place in a way that takes the user beyond the capacity of his senses. To do so requires an interface of one kind or another through which extrasensorial information is accessed, and this means visual representation. Where there is visual representation, there is the lurking trap of the spectacle because there is the eminent danger of creating a new surface reality, eliding the actual place from the story.

Notes

- 1 Ben Anderson and Colin McFarlane, “Assemblage and Geography,” *Area* 43, no. 2 (2011): 124–7.
- 2 Jane Bennett, *The Enchantment of Modern Life: Attachments, Crossings, and Ethics* (Princeton: Princeton University Press, 2001), 58.
- 3 Quotation paraphrased from: Melissa L. Caldwell, “Digestive Politics in Russia: Feeling the Sensorium beyond the Palate,” *Food & Foodways* 22, nos. 1–2 (2014): 112–35.
- 4 Matthew W. Wilson and Mark Graham, “Guest Editorial: Situating Neogeography,” *Environment and Planning A* 45 (2013): 3–9; Alberto Cairo, *The Functional Art: An Introduction to Information Graphics and Visualization* (Berkeley: New Riders, 2013); David McCandless, *Information is Beautiful* (London: Collins, 2012).

- 5 Umberto Eco, *How to Write a Thesis*, trans. Caterina Mongiat Farina and Geoff Farina (Cambridge, MA: The MIT Press, 2015 [1977]); Chapter 4: “The Work Plan and the Index Cards,” 107–41.
- 6 Though from an entirely different context, an excellent example of digital tools operating behind the scenes is: David McClure, “A Hierarchical Cluster of Words Across Narrative Time,” *Techne*, July 31, 2017. <https://litlab.stanford.edu/hierarchical-cluster-across-narrative-time/>.
- 7 See also: T.M. Harris, “Deep Mapping and Sensual Immersive Geographies,” *The International Encyclopedia of Geography* (2017): 1–13.
- 8 “Informed speculation” is a phrase I learned from Maria McVarish in her 2019 dissertation at Stanford University’s Modern Thought and Literature program. There is currently not available a cite-able version of this work. I have also advocated for similar approaches in geography; see: Nicholas Bauch, “A Scapelore Manifesto: Creative Geographical Practice in a Mythless Age,” *GeoHumanities* 1, no. 1 (2015): 103–23.
- 9 Harriet Hawkins and Elizabeth Straughan, “Introduction: For Geographical Aesthetics,” in Harriet Hawkins and Elizabeth Straughan, eds., *Geographical Aesthetics: Imagining Space, Staging Encounters* (Burlington, VT: Ashgate, 2015), 1–17.
- 10 This is a huge theme in geography and the environmental humanities. For some key examples, see: Sarah Whatmore, *Hybrid Geographies* (London: Sage, 2002); Eduardo Kohn, *How Forests Think: Toward an Anthropology beyond the Human* (Berkeley: University of California Press, 2013).
- 11 Timothy Morton, “The Mesh,” in Stephanie LeMenager, Teresa Shewry, and Ken Hiltner, eds., *Environmental Criticism for the Twenty-First Century* (New York: Routledge, 2011).
- 12 Richard Misrach and Kate Orff, *Petrochemical America* (New York: Aperture, 2012); Eben Kirksey, *Emergent Ecologies* (Durham: Duke University Press, 2015); Jamie Kruse and Elizabeth Ellsworth, *Geologic City: A Field Guide to the Geoarchitecture of New York* (New York: Smudge Studio, 2011).
- 13 David Fletcher, “Flood Control Freakology: Los Angeles River Watershed,” in Kazys Varnelis, ed., *The Infrastructural City: Networked Ecologies in Los Angeles* (Barcelona: Actar, 2008); Bruno Latour, “Love Your Monsters: Why We Must Care for Our Technologies as We Do Our Children,” in Michael Shellenberger and Ted Nordhaus, eds., *Love Your Monsters: Postenvironmentalism and the Anthropocene* (San Francisco: Breakthrough Institute, 2011). Daniel Schneider, *Hybrid Nature: Sewage Treatment and the Contradictions of the Industrial Ecosystem* (Cambridge, MA: The MIT Press, 2011).
- 14 Graham Harman, *Towards Speculative Realism: Essays and Lectures* (Washington, DC: Zero Books, 2010), 75.
- 15 William Cronon, ed., *Uncommon Ground: Rethinking the Human Place in Nature* (New York: W.W. Norton, 1996), 57–66; J. Wills, “‘Welcome to the Atomic Park’: American Nuclear Landscapes and the ‘Unnaturally Natural,’” *Environment and History* 7, no. 4 (2001): 449–72.
- 16 J.-D. Dewsbury, “The Deleuze-Guattarian Assemblage: Plastic Habits,” *Area* 43, no. 2 (2011): 148–53; quote on p. 150.
- 17 In some of my recent work I have tried to start this conversation of method. See: Nicholas Bauch, *A Geography of Digestion: Biotechnology and the Kellogg Cereal Enterprise* (Oakland: University of California Press, 2017).
- 18 Anna Lowenhaupt Tsing, “Empowering Nature, or: Some Gleanings in Bee Culture,” in Sylvia Yanagisako and Carol Delaney, eds., *Naturalizing Power: Essays in Feminist Cultural Analysis* (New York: Routledge, 1995).
- 19 Rona Cran, *Collage in Twentieth-Century Art, Literature, and Culture: Joseph Cornell, William Burroughs, Frank O’Hara, and Bob Dylan* (New York: Routledge, 2016), 5.
- 20 Jedediah Purdy, *After Nature: A Politics for the Anthropocene* (Cambridge, MA: Harvard University Press, 2015).

- 21 Weaving as a metaphor for place is from: Robert David Sack, *Homo Geographicus: A Framework for Action, Awareness, and Moral Concern* (Baltimore: Johns Hopkins University Press, 1997).
- 22 Dewsbury, “The Deleuze-Guattarian Assemblage,” 150.
- 23 For a discussion on mapping and political control, see: Stuart Elden, *The Birth of Territory* (Chicago: The University of Chicago Press, 2013).
- 24 One relatively early precedent here is: Margaret Wickens Pearce, “Framing the Days: Place and Narrative in Cartography,” *Cartography and Geographic Information Science* 35, no. 1 (2008): 17–32. And a more recent articulation of this practice is: Anne Kelly Knowles, Levi Westerveld, and Laura Strom, “Inductive Visualization: A Humanistic Alternative to GIS,” *GeoHumanities* 1, no. 2 (2015): 233–65.
- 25 Jonathan Murdoch, “Towards a Geography of Heterogeneous Associations,” *Progress in Human Geography* 21, no. 3 (1997): 321–37.
- 26 The notion of the technological treadmill as it relates to capitalist agricultural production is found in Keith Dexter, “The Impact of Technology on the Political Economy of Agriculture,” *Journal of Agricultural Economics* 28, no. 3 (1977): 211–19. This metaphor taken from agricultural economics fits nicely with an impulse in digital humanities to keep pushing toward new technologies as a means of conducting new research.
- 27 See also: Matthew W. Wilson, *New Lines: Location-Aware Futures and the Map* (Minneapolis: University of Minnesota Press, 2017).
- 28 Anne Burdick, Johanna Drucker, Peter Lunenfeld, Todd Presner, and Jeffrey Schnapp, *Digital Humanities* (Cambridge, MA: The MIT Press, 2012).
- 29 William A. Koelsch, “Squinting Back at Strabo,” *The Geographical Review* 94, no. 4 (2004): 502–18.
- 30 George H.T. Kimble, “The Inadequacy of the Regional Concept,” in John Agnew, David N. Livingstone, and Alisdair Rogers, eds., *Human Geography: An Essential Anthology* (Malden, MA: Blackwell, 1996 [1951]), 511.
- 31 Kathleen Fitzpatrick, “Beyond Metrics: Community Authorization and Open Peer Review,” in Matthew K. Gold, ed., *Debates in the Digital Humanities* (Minneapolis: University of Minnesota Press, 2012). Nina Belojevic and Jentery Sayers, “Peer Review Personas,” *The Journal of Electronic Publishing* 17, no. 3 (2014). <http://dx.doi.org/10.3998/3336451.0017.304>.
- 32 Guy Debord, *The Society of the Spectacle*, trans. Ken Knabb (Berkeley: Bureau of Public Secrets, 2014 [1967]), 2.
- 33 Walker Percy, *The Message in the Bottle: How Queer Man Is, How Queer Language Is, and What One Has to Do with the Other* (New York: Farrar, Straus and Giroux, 1975). In chapter 2, Percy writes about the visual “symbolic complex” of the Grand Canyon—how it is almost an entirely visual and non-tactile experience for the vast majority of its visitors.
- 34 John Lanchester, “You Are the Product,” *London Review of Books* 39, no. 16 (2017): 3–10.
- 35 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010).