

Mapping Up: Repositioning Critical Cartographic Practice

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*This article considers the methodological stance of critical cartography, proposing “mapping up” as a form of critical cartographic practice. Beginning with reflections on cartography in the first issue of *Antipode* and the posthumous work of Howard Fisher, we consider how cartography has figured the relationship between colonizer and colonized, the colony and the metropole, the ground and the surface. Building on these reflections, we respond to a recent resurgence of interest in the work of the anthropologist Laura Nader, thinking through how her arguments for “studying up” pertain to persistent debates in both critical cartography and the social sciences more broadly. We argue that critical cartography has often taken an epistemic shortcut to a positional question: who is the mapmaker to the mapped? By too consistently focusing on the power of the map (and assuming the power of the mapmaker), we have narrowed our methodological focus and developed few resources for theorizing mappings of relative elites by mapmakers in relatively less powerful positions. We examine this contention in the context of work that “maps up”: tenant solidarity projects by Mutual Aid Medford and Somerville, the Anti-Eviction Mapping Project, and JustFix.nyc, as well as High Country News’s “Land Grab U.” Finally, we share recent work on a cartographic R package, unknownpleasur, that is indebted to the work of Fisher, but also oriented towards the simultaneous representation of systems of oppression alongside their effects.*

KEYWORDS: mapping up; critical cartography; counter mapping; critical GIS; methodology

INTRODUCTION

THE FIRST ISSUE OF *ANTIPODE* CONTAINS A SINGLE, solitary map (Thompson and Emerson 1969, 16). A little over a dozen pages into the journal, the reader is greeted by the planet in stark mimeograph, its implied lines of latitude bending away from the equator in a Lambert azimuthal equal-area projection (see Figure 1). The eastern hemisphere is shaded with a white dot matrix pattern in a figure-ground relationship with an inverted, shadowy western hemisphere. The antipodes, the furthest possible distances from each point on the Earth’s surface, are brought close through superimposition. This is not so unusual; as a method of representing antipodal points, it is even conventional, so much so that this style of map is used to illustrate the “Antipodes” Wikipedia article at the time of this writing.

However, here, it is reproduced alongside the words of an academic discipline’s radicalizing wing. It sits between articles by James Morris Blaut on disciplinary imperialism (1969) and Fred Donaldson on the anti-Black racism implicit in the geographic enterprise (1969; see also Kobayashi 2019).¹ The map’s task, in this context, is not to remind us of a rote geographic fact, but to spur a relational geographical imagination. Thompson and Emerson leave no question: the fates of the ends of our earth are intertwined; the metropole is not so far from the periphery; “up” is always relative to “down.” Like the well-known “blue marble” photograph that NASA would reveal a few years later, this world image is part of an ideological project (Cosgrove 1994; 2001). However, where the blue marble became a symbol for the liberal one-worldism of the environmental movement’s first wave, *Antipode*’s planet

1. It merits saying that geography’s radicalism was complicated with regards to gender and feminist politics (see, e.g., Huber et al. 2019). We also note the presence of Donaldson following contemporary Black geographies’ forceful rearticulation of the urgency of centering Black life in geographic thought (Bledsoe and Wright 2019; Noxolo 2022; Moulton and Salo 2022; Eaves 2017; Hawthorne 2019; McKittrick 2011).



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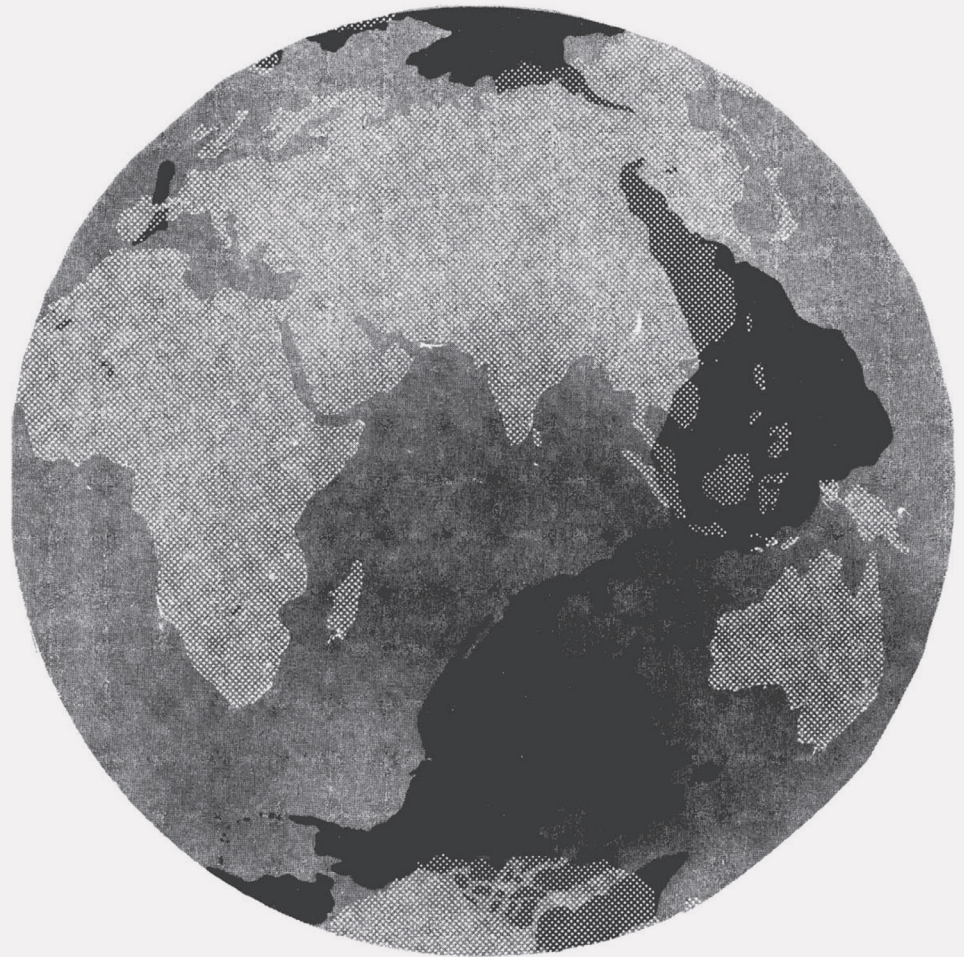
UNIVERSAL ANTIPODE PROJECTION

suggests something else: the simultaneous conflict and connectedness of a decolonizing world, the difference between, and mutual constitution of, “up” and “down.”

We offer another episode in the recent history of mapping, this time drawn digitally. Howard Fisher’s posthumously published *Mapping Information: The Graphic Display of Quantitative Information* (1982)² was his attempt to synthesize his thinking on thematic map design, following a career in which he had served as, among other things, Director of the Laboratory for Computer Graphics and Spatial Analysis at Harvard University (Wilson 2017).

In the text, Fisher exhibits the Lab’s signature interest in surficial representation (Huntley 2023; McHaffie 2000; Hessler 2009; Chrisman 2006), moving rapidly between contour maps and oblique views of elevated section cuts. The discussion in the book is frankly dry and based primarily on assertion (e.g., “While overall comprehension is usually excellent with this system and each value is shown, it is difficult to relate the values to positions in the base plane” [Fisher 1982, 82]). However, the proliferation of forms stands, to some extent, as its own form of argumentation. This is restless cartographic production, as interested in volume and relief as it is in the ground plane. Lines fly up, down, and around in a manner which we take as a challenge to contemporary cartographic practice (Figure 2).

The ground exerts a particular pull upon cartographers. As adherents to an orthographic view of the world, the surfaces that we draw tend to lie flat, to presume a view from above, to suggest that relations between things are relations between layers, each drawn as a horizontal plane,



Compiled by: K. Thompson
B. Emerson

Figure 1. Universal Antipode Projection, K. Thompson and B. Emerson in *Antipode* (1969).

rather than relations between entities. We don’t mean to overstate the case: Fisher’s maps, as much as any, are invested in the reduction and simplification of planetary phenomena and in their flattening. However, in iterating through perspectives, conventions, and views, they offer a way to imagine maps as interested in depth—which is to say, the relationship between below and above—as in extent.

We are grateful to the organizers of this issue for giving us cause to start from the archives. The organizing theme of this issue, “Back to the Future,” asserts the value of past

2. While the text is attributed to Fisher alone, it is also worth noting that, in Brian Berry’s estimation, the 25% of the “intellectual effort” remaining on the book at the time of Fisher’s death was invested by Jacqueline Cohen and Eliza McClennen, the latter of whom drew many of its graphics (Berry 1982, xix).

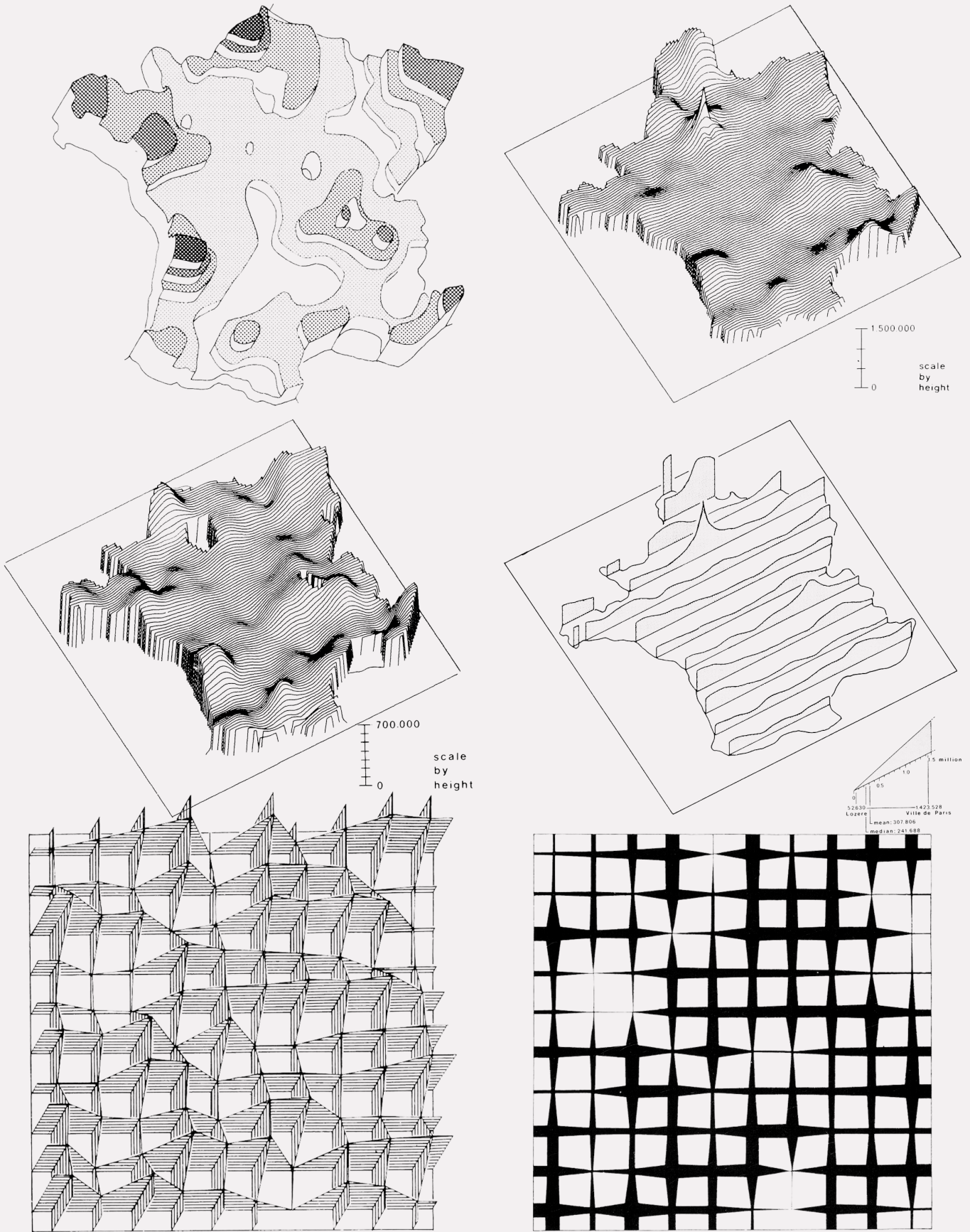


Figure 2. Experiments in thematic mapping from *Mapping Information*.

practice and insists that there are threads to pull on in the productive tensions therein. These two cartographic moments that we elevate have very little in common in the domain of politics, either material or epistemic. However, placed together, we take them to imply that mapping can do more to articulate the relatedness of “down” to “up” and that many of our mappings, adhering as they do to an implied perspective from on high, map *down*. We take this opportunity to expand on “mapping up” as a critical mapping methodology interested in drawing lines: from colonizer to colonized, mineral pit to corporate digger, evicted tenant to evicting landlord. This is a thread that Eric began pulling on in several prior publications (Huntley 2022; Alton et al. 2022), and we understand it as a methodology that encourages serious cartographic consideration of *both* the damage done and those systems responsible for the damage. Like the first issue of *Antipode*’s “Universal Antipode Projection,” mapping up takes seriously the charge to map, and map again, the relations setting the world on fire.

STUDYING UP

IN THINKING ABOUT “MAPPING UP” (AND DOWN, AND around) we should identify the help that we’re enlisting. We’re invoking the work of Laura Nader, a UC-Berkeley anthropologist (and sister of consumer advocate Ralph Nader) who wrote that anthropologists had been too slow to take up their anthropological tools to study the powerful—in other words, to “study up.” As Nader puts it:

What if . . . anthropologists were to study the colonizers rather than the colonized, the culture of power rather than the culture of the powerless, the culture of affluence rather than the culture of poverty?

If . . . we were principally studying the most powerful strata of urban society . . . we would study the banks and the insurance industry that mark out areas of the city to which they will not sell insurance or extend credit. We would study the landlord class that ‘pays off’ or ‘influences’ enforcement or municipal officials so that building codes are not enforced. [Slums] might be called by another name which would indicate that they were the results of white-collar crime. (1972, 289–90)

We proceed as follows: we begin by situating our call for mapping up within existing literatures. We then gesture towards a recent resurgence of interest in Laura Nader’s (1972) work on what she called “studying up,” particularly in critical data studies, and use it to offer a clarification to recent debates in critical GIS. In particular, we focus in the counter cartography tradition and Taylor Shelton’s very useful recent intervention into critical mapping practice (2022), arguing that these give us ground for justifying critical mapping practice on positional rather than epistemic grounds. In making this argument, we point towards several recent influential critical mapping projects that deploy data-scientific techniques to levy a critique of the political economies of housing and settler-colonial expropriation. We close by introducing some recent cartographic experiments in which we’ve been engaged, particularly our [unknownpleasur](#) R library, which supports multivariate mapping of Fisher-indebted surfaces: one of many cartographic possibilities that might follow from a commitment to mapping up.

This is a powerful argument, and one that we hear echoed in [our ongoing work](#) on housing and institutional landlordism. By emphasizing the study of people who have been made marginal, social scientists perpetuate deficit narratives (D’Ignazio and Klein 2020), identifying marginality as its own problem rather than drawing our empirical eye to those engines and agents of exploitation that *produce* that marginality.

By focusing on the *effects* of exploitation, we are studying a phenomenon-once-removed and creating the conditions for policies that treat the symptom rather than the cause. This echoes widely across multiple subfields wrestling with their methodological orientations towards matters of justice, which may explain the recent resurgence of interest in Nader’s work in, for example, critical data studies. Chelsea Barabas and co-authors have argued that “studying up” could provide a useful corrective as researchers in algorithmic fairness turn from questions of procedural fairness to questions of substantive justice (2020). In their words:

Data science projects that “study up” could lay the foundation for more robust forms of accountability and a deeper understanding of the structural

factors that produce undesirable social outcomes via algorithmic systems. (2020, 168)

Similarly, Milagros Miceli and colleagues identify the friction quite directly in their 2022 paper, asking in its title, “why talk about bias when we mean power?” (Miceli et al. 2022). They argue that addressing the questions raised by algorithmic systems requires

a relational view on the power dynamics and the economic imperatives that drive machine learning, i.e., considering that biases do not occur in a vacuum but are fundamentally entangled with naturalized ways of doing things within the organizations where datasets and models are developed. (Miceli et al 2022, 34:3)

In this way, the resurgence of interest in Nader’s methodological stance emphasizes that “studying up” and, for us, “mapping up” are not only about generating more complete or accurate knowledge of how power functions. They also tie knowledge explicitly to those systems that

are “doing things,” suggesting a mapping practice that extends beyond description and towards fundamentally political questions of accountability and redress. They also center the positionality of the researcher and its directional situatedness along the lines drawn by power. It is this dimension of the argument to which we now turn. Nader says that

we would sooner or later need to study down as well. We aren’t dealing with an either/or proposition; we need simply to realize when it is useful or crucial in terms of the problem to extend the domain of study up, down, or sideways. (1972, 292)

Here, it becomes clear that in addition to the relational dimensions of Nader’s claim, it is also intrinsically positional and pluralistic. “Up,” “down,” and “sideways” speak to the rather complicated positionality of the contemporary mapmaker—often, though not always, privileged along many intersecting axes of identity, but nevertheless not uniformly powerful.

MAPPING UP

TO SPEAK OF MAPPING AND POWER, WE MUST, OF course, begin from the fact that critical mapping has benefited from a series of major interventions by human geographers and critical GIScientists. We benefit from a discipline that has given sustained and critical attention to those questions of power/empowerment, expertise/knowledge, and exploitation/liberation that tend to co-occur when mapping meets the ground. This work has, of course, traveled under many banners within and adjacent to geography. A non-exhaustive list would include (Public) Participatory GIS (Sieber 2006; Kwaku Kyem 2004; Elwood 2006), participatory action mapping (Boll-Bosse and Hankins 2018), community geography (Shannon et al. 2020), critical GIS (Wilson 2017; Thatcher et al. 2016; Schuurman 1999), counter mapping (Peluso 1995; Counter Cartographies Collective et al. 2012; Bélanger and Arroyo 2016; Alton et al. 2022; Maharawal and McElroy 2018), and feminist mapping (Kelly 2019; Kwan 2002). These traditions are in many ways quite distinct. They draw on divergent bodies of theory and articulate divergent forms of practice. However, in general, they advance a strong epistemic critique of mapping alongside advocacy for a democratized knowledge politics. Underlying

these arguments is a negotiation between the positionality of the relatively privileged mapmaker documenting forms of oppression and that of oppressed folks who are involved, ideally, as collaborators or co-designers.

We argue that, for the most part, these interventions have conflated two separate, albeit related, concerns: the positionality of the mapmaker, and the epistemology of the map. It is taken as given that because mapping invokes a system of abstracting, objectifying conventions; because its techniques emerge from and often reinforce military, racist, and colonial knowledges; and because it is reliant on absolutizing Cartesian techniques that have long been suspect amongst feminist and decolonial scholars; maps are always in danger of grasping for totality, reinforcing phallogocentric logics, and reproducing colonial ways of knowing. In other words, the assumption is that the power of maps inheres in the mapping, regardless of the mapmaker, regardless of the mapped. We follow the thinking of Catherine D’Ignazio, who has recently argued against a deterministic view of a given technology’s epistemic and political potential: “Just because technology is birthed from war and militarism and colonial violence doesn’t

mean that it cannot be employed toward serving as resistance to and liberation from the same” (2024, 16). We see “mapping up” as one way, among many, to place mapping technology in the service of liberatory research.

As Rebecca Warne Peters and Claire Wendland have argued, “studying up” does not rely on power relationships that are absolute or fully durable (2016). Instead, “up” indicates the relation of the mapmaker to the mapped, requiring attention to what Edward Said calls the “relative upper hand” (2014). At the very least, what this suggests is that to absolutely locate the power of the map within the epistemology of the map discards a robust analysis of the many, intersectional axes along which social power operates. In critical cartography, we argue, we have too thoroughly generalized what Emily Tilton calls the “strong epistemic disadvantage thesis,” or the notion that “dominant social positions impose strong, substantive limits on what the socially dominant can know about the oppressions of others” (2024, 1). Framed differently, cartographers have relied on what Olúfẹ́mi O. Táíwò calls “differential politics,” in which ceding authority is seen as the guarantor of liberatory politics (Táíwò 2022). As Táíwò argues, this is a good idea and a necessary first step, but an inadequate basis for liberatory change that requires what he calls “constructive politics.” As Gillian Rose has argued, it is just as untenable to insist on the researcher’s (and, we can add, the mapmaker’s) ability to write power from an absolutely identified position of knowledge as it is to make absolute, a-positional knowledge claims—what she calls the “goddess trick” (1997). As Haraway reminds us, “there is good reason to believe vision is better from below the brilliant space platforms of the powerful” (Haraway 1988, 583). But who are “the powerful” and who is capable of speaking “from below”? These are questions that, as Eric has said elsewhere, involve “a change in the angle of the head, a change in the position of the eyes, and an adjustment of their focal depth” (Huntley 2022, 78). They are contingent, intersectional, and, ultimately, relational, questions having to do with both politics and epistemic tensions within critical mapping practice.

COUNTER-CARTOGRAPHY

We understand “mapping up” as sitting within the multiple traditions of counter cartography. Counter cartography has been claimed by varied practitioners, with diverse empirical and theoretical orientations. Within the literatures

of geography, Nancy Peluso was the first to use the term and applied it to the work of NGOs and expatriate social scientists in Indonesia attempting to “appropriate the state’s techniques and manner of representation to bolster the legitimacy of ‘customary’ claims” to forests (Peluso 1995, 384). Within this thread of counter-cartography, the “counter” in question refers to a contestation of state claims on and management of land and resources, often, though not always, by or with Indigenous communities (Louis et al. 2012; Wainwright and Bryan 2009; Hunt and Stevenson 2017; Pearce and Hornsby 2020; Guldi 2022; Harris and Hazen 2005).

A wider range of differently oriented counter-cartographies have also emerged, claiming the mantle in order to suggest a broadly adversarial approach to cartographic research. Some take specific interest in practice that works to produce new solidarities and subject positions. The Counter Cartographies Collective (3Cs), for example (Counter Cartographies Collective et al. 2012) does so within an autonomist tradition of “militant research.” The [Anti-Eviction Mapping Project](#) has framed some of its work similarly, seeking to build knowledge of sites of memory and struggle within anti-gentrification movements (Maharawal and McElroy 2018), as well as to situate the many compromises of software development within what they call “grounded relationalities,” following Byrd et al. (2018; McElroy 2022). Others take the label to primarily imply an adversarial stance towards the mapped, with a more ambivalent relationship to mapper subjectivity (Alton et al. 2022; Bélanger and Arroyo 2016). All of these orientations appear as well in the life that “counter-“ practices have found within critical data studies (D’Ignazio 2024; Dalton and Stallmann 2018; Meng and DiSalvo 2018).

We understand our intervention to be different. Whereas counter mapping emphasizes mapping practice that counters authoritative knowledge, “mapping up” is broader and inclusive of cases where the map may not counter dominant forms of knowledge. This, of course, always carries a risk; even counter-maps can reinforce the logics they oppose (Iralu 2021). We nevertheless remain compelled by knowledge that is oriented towards accountability and redress of actors who hold Said’s “relative upper hand,” even when these are based on conventionally authoritative data sources.

CRITICAL GIS

We also understand “mapping up” in a manner informed by recent literatures in and around critical GIS, which has always placed the power-laden tensions felt by the mapping subject near the center of its concerns. Pavlovskaya and St. Martin (2007), Schuurman and Pratt (2002), and Wilson (2009, 2018) give us generative frameworks for feminist mapping work that is both invested in the practice of mapping and dedicated to destabilizing its masculinist epistemologies and assumptions. More recently, D’Ignazio and Klein (2020), and Kelly and Bosse (2022) however, considerations of power are often difficult to represent in the map and fail to include considerations of power tied to the mapmaker. As such, we invite mapmakers of all backgrounds and skill sets to “press pause” on traditional workflows to incorporate feminist considerations and representations of power and position. We begin by reviewing reflexivity and exploring the ways it enables deep engagement with systems of privilege and oppression. We then situate reflexivity as the foundation of a feminist toolkit for “doing” feminist mapping, a toolkit that calls mapmakers to explore the multiple planes of the matrix of domination (interpersonal, hegemonic, disciplinary, structural rearticulate feminist subject positions in mapping following the enormous changes in mapping and data science as fields of practice, due to the uptake of mapping technology by non-state actors, and social/political movements in particular. Far from the state and colonial cartographies described by the first generation of critical cartographers—though, of course, at risk of rearticulating their logics—mapping, and now (spatial) data science are now understood as forms of practice subject to interventions by feminist, Black, Indigenous, trans, and queer epistemologies, literatures, and subjectivities (Giesekeing 2018; Bottone 2020; Lucchesi 2018; Walter and Andersen 2013; Rivera 2023; Restar et al. 2023). These mapmaker subjectivities demand a reconsideration of the unidirectional power relations often assumed to inhere in mapping practice.

Many of the tensions that follow from these interventions were recently distilled by Shelton, who offers a useful way of thinking about critical practice (2022). He argues that critical cartographers have tended to think of their work in one of two ways. In the first, they seek to destabilize cartographic knowledge practices, following broadly

post-structural and feminist argumentation. In the second, they strategically leverage the conventions and forms of argument found in empiricist social science to levy urgent critiques of existing injustices, largely leaving aside questions of epistemology. Here, Elvin Wyly’s argument for “strategic positivism” is a common reference (Wyly 2009). Wyly, drawing on Gayatri Spivak’s “strategic essentialism” (Spivak 1999), argues for the strategic necessity of suspending the social scientific left’s skepticism of empiricism if research is to support liberatory politics with all available tools.³

The tension between these two strategies—destabilize and strategically leverage—is readily apparent. It is far from obvious how one could coherently and simultaneously destabilize *and* claim the authority of an approach or method. Essentially, Shelton’s argument is that new (or renewed) modes of cartography put towards liberatory ends can do both: destabilize the authority of conventional cartography and make empirically compelling arguments for the persistence of injustice. He argues for a situated mapping practice that, among other things, develops cartographic techniques that sit between these tendencies.

Our argument ultimately builds on Shelton’s, though we note that his argument for “situated mapping” raises some questions that he leaves unanswered. For example: the critique of mapping as one of Donna Haraway’s “God tricks” is ever-present (1988). While the epistemic implications of the trick have been subject to scrutiny within the discipline (and without), the powerful position implied by the God trick has largely been assumed: the mapmaker has a powerful gaze that views the mapped from above. This implies that *to map is almost necessarily to map down*. But this is not necessarily true. Which of the concerns about the perceived authority of a map fall away when a journalist maps malfeasance within the halls of finance? What about when a renter, a tenant, even one privileged along many axes, maps landlords? The power and potential of a situated mapping practice is, yes, to construct cartographic forms that challenge too-stable spatialities, as Shelton argues. But it is also to challenge the notion that the power of the map is epistemic, not material, and itself, limited by the power of a mapmaker relative to the power of the mapped.

3. Our insistence on the language of “empiricism” reflects our strong agreement with Eric Sheppard, who argues that contemporary invocations of “positivism” function more as a social scientific slur, and that what we often call “positivism” is closer to empiricism (2014).

Sarah Elwood writes the closing article in the special issue of *Acme* in which Shelton’s piece appears. She identifies what she calls a “fourth generation” of critical GIS (2022), building on the three previously identified by Schuurman (2000) and elaborated by Wilson (2017). Elwood distinguishes this “generation” with reference to its “extraordinary politics.” By “extraordinary politics,” Elwood means those that “that arise from and point to . . . conceptions

of worlds beyond racial capitalism, settler colonialism, cis-heteronormativity, as interlocking structures and relations that overdetermine white supremacy” (Elwood 2022, 442) and fight against the limits of representational practice. We do not claim “mapping up” as exemplary in this fight, though we hope that it is of use to others who, like us, are striving towards what Elwood calls “liberation ontologies,” as one methodology among many.

MAPS, UP

WE CAN POINT TO MULTIPLE EXAMPLES OF MAPPINGS that instantiate a practice of “mapping up,” though it is telling that these have often taken the form of tools rather than conventional scholarship. As tools, generally constructed outside of the strictures of academic discourse, they generally maintain an ambivalent, pragmatic epistemology: given the evidence available to us, what are the claims we can make, and how do we make these work? Indeed, recent calls for tool-building in geography and the spatial sciences resonate here (Boeing 2020), as do feminist claims from the early days of critical GIS: that critical scholarship must have a stake in the tools themselves, rather than staging an external evaluation of their epistemic merit (Schuurman and Pratt 2002; Wilson 2009). As Sara Ahmed argues, tools are instruments for “sharpening the edges” of critical work, things that we are obligated to hold onto and not put down (Ahmed 2017).⁴

TENANT ADVOCACY MAPS

We can see similar dynamics in recent efforts to map landlord-tenant relations, including our own. The Anti-Eviction Mapping Project’s Evictorbook (Figure 3), Mutual Aid Medford and [Somerville’s Tenant Power](#) (which Eric led the development of, Figure 4), and [WhoOwnsWhat.nyc](#) (Figure 5) have similar aims, with similar origins: movements for housing justice fighting for tenants, against landlords, facing down the inscrutability of land records. In brief: identifying owners is an extremely difficult process, due to the legal incentives in place for landlords to operate under multiple LLCs, to isolate the assets tied up in each building from suit by a tenant renting elsewhere. This has been the subject of an exciting body of methodological scholarship in urban data science (Immergluck et al. 2020; Gomory 2022; Hagen and O’Brien 2025; Shelton and Seymour 2024; Preis

2024). But it has also yielded powerful mapping tools, like these above, that use machine learning and network analysis techniques to identify shared ownership, and that emerge from variously institutionalized movement contexts. JustFix, for example, is a 501(c)(3) non-profit, benefiting from a wide range of funding sources, including banks (Capital One, MUFG, Deutsche, M&T, Wells Fargo), foundations (Chain Zuckerberg Initiative, FJC, Robert Wood Johnson, Open Society, Oak, New York Bar, Pershing Square, Awesome), universities (Harvard,

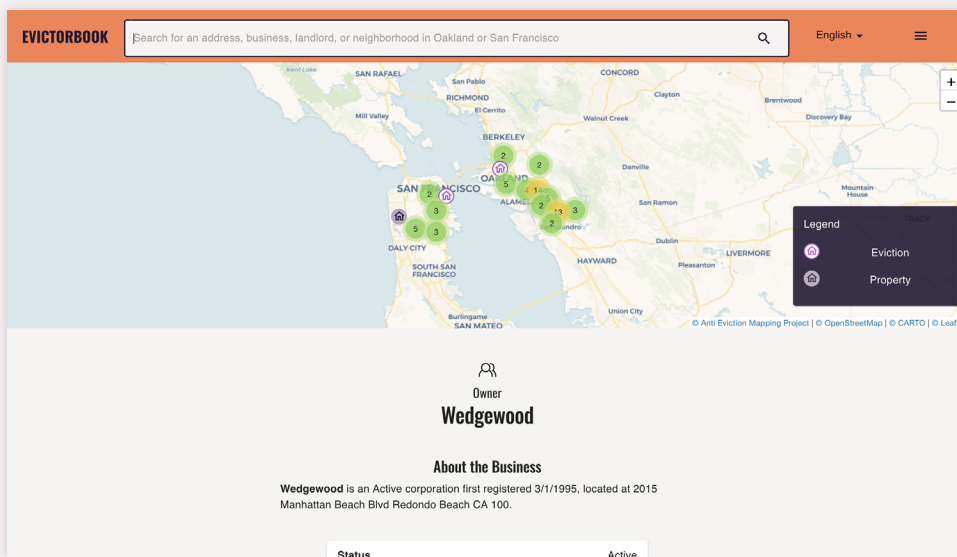


Figure 3. Anti-Eviction Mapping Project’s “Evictorbook”

4. We are grateful to one of our reviewers for reminding us of Ahmed’s thinking on tools—what a delight to place Ahmed in conversation with Boeing, however briefly!

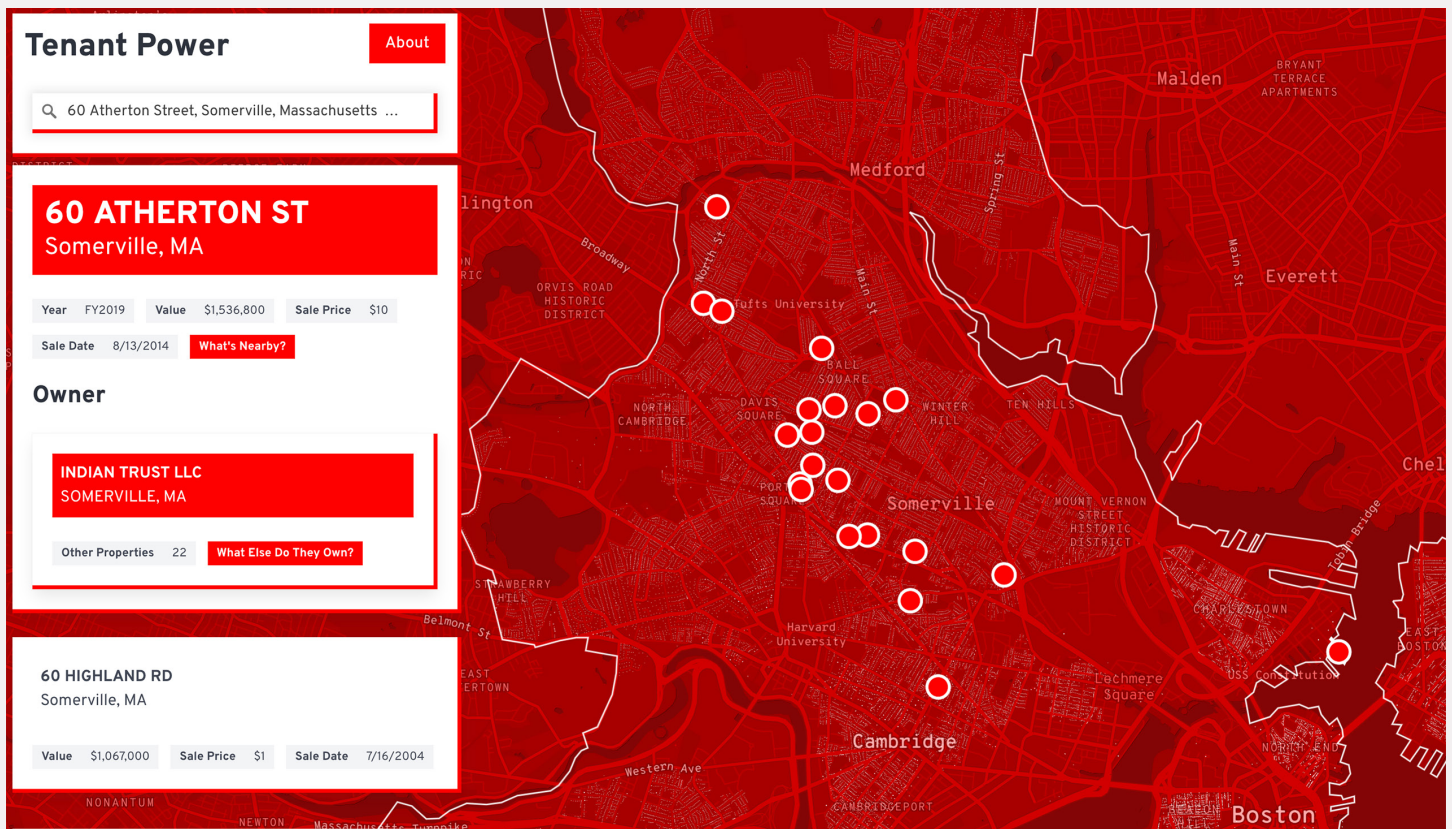


Figure 4. Mutual Aid Medford and Somerville (built by Eric), "Tenant Power."

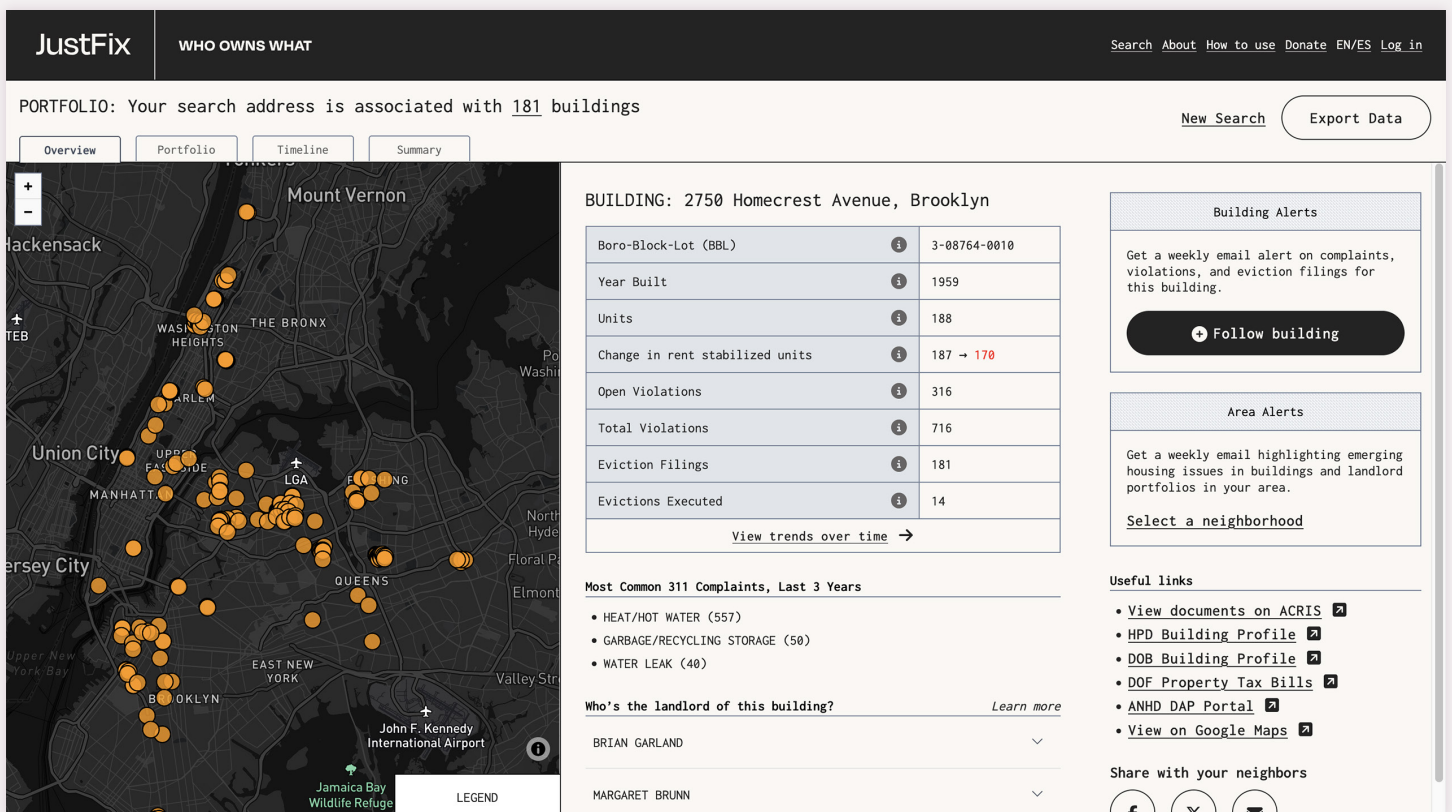


Figure 5. WhoOwnsWhat.nyc, developed by JustFix.

NYU), the New York City mayor's office and council, and Google. The Anti-Eviction Mapping Project is a collective pursuing a range of projects across the Bay Area, Los Angeles, and New York City. Tenant Power was the work of three activists involved in the housing justice working group of Mutual Aid Medford and Somerville that had yet to secure fiscal sponsorship at the time of its development.

These three tools were selected because they suggest the immense range of subject positions occupied by mapmakers working to de-obfuscate landlord relations. This throws some of the old questions of mapping and power on their head, relative to how they have been asked within the critical cartographic literature. What is the relative power of the tenant mapmaker to the landlord mapped? And how does it change the epistemic and material stakes of mapping work to place evidence of housing precarity in the context of their sustaining power structures: property governance regimes that are constructed in favor of property owners, and arrayed against tenants' right to shelter. Even this is an internally multiple question: these tools are developed in organizational contexts that range widely, with associated differences in theories of change, technical sophistication, and the sustainability of software. And, as AEMP's McElroy points out, compromises are involved: Evictorbook relies on AWS servers to host its graph databases (2022). TenantPower is still maintained, but ceased active development in 2021 as Eric, its lead developer, has moved on to expanding the work into a tool, Who Owns Massachusetts, that supports state-wide search of deduplicated ownership records—with funding from the Conservation Law Foundation and in collaboration with the Healthy Neighborhood Study.

Ultimately, these projects don't internally pose the epistemic questions they raise. Instead, they raise relational ones: what is the capacity of mapping work to intervene in an unjust system, weighted against tenants? They map up—taking an originating interest in the networks of ownership that characterize contemporary rentier capitalism (Christophers 2022)—while also mapping down—documenting the

relationship between ownership and eviction, code violations, and hardships met by tenants. These maps struggle for new and more just worlds, but to analyze their power in the most easily accessible registers of critical cartographic scholarship falls short: these maps can only claim a small part of the world-making power of the social movements they support.

LAND GRAB U

Finally, we uplift *High Country News's* “Land Grab Universities” project (Figure 6), which meticulously connects the financing of the US land-grant university system via the 1862 Morrill Act to its material base: land expropriated from Indigenous tribes and offered as speculative holdings to universities, who used its sale to fund their endowments (Lee et al. 2020). In drawing these lines (from land stolen from Indigenous peoples to major research universities), it complicates what Tuck calls “damage-focused research” (2009), or the prevalent social scientific impulse to document disparity and, in doing so, pathologize communities. Instead, the tool spatializes a direct relationship between injustice and injustice's beneficiaries, namely the research institutions in which many of us toil and from which many of us benefit.

Built by a team of both Indigenous and settler cartographers, researchers, and journalists, the map can claim a

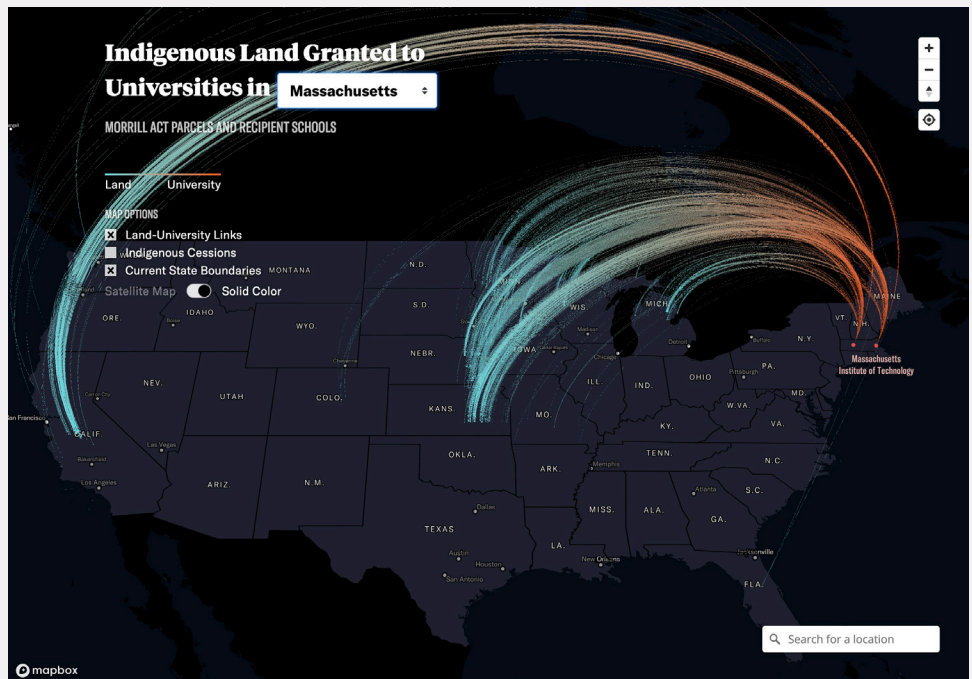


Figure 6. “Land Grab Universities” (High Country News).

positional legitimacy that draws from lived experience, but it also makes direct and strong epistemic claims that identify, quite clearly, the lines from one antipode to the other: from settler institutions to Indigenous land, from US higher education to its material base. The authors could have taken a tack in which they cartographically emphasized the stolen land itself—this would be analogous to the approach taken by, for example, the Mapping Inequality project that made the Homeowners Loan Corporation “redlining” maps available to researchers (Connolly et al. 2018; Krieger et al. 2020; Michney 2022). This would have documented the damage, while absencing the beneficiaries. Instead, the map starkly documents the spidery lines through which land theft traveled into the endowments of the land grant college system, placing the relationship between higher education and settler-colonialism in the United States at the core of the visualization. The project maps up—the universities, their endowments—even as it

maps down and, for some of the project’s authors around—the stolen land, the coercive treaties.

And yet, the line from the map to the world it demands cannot be drawn directly. Our students and colleagues have been demanding a recognition of MIT’s complicity in the theft of Indigenous land, supported by the work of this project; signs hang in our department halls reading “MIT EXISTS because of the theft and sale of CO-YE-TIE LAND Morrill Act 1862.” A student recently asked Eric—and they agreed—to replace their office label with one commemorating the Coast Tribes of Oregon, whose 30,000 stolen acres were sold to raise \$822,967 for the settler state. Work to hold the Institute to make meaningful commitments to repair are ongoing—maps can draw the lines, but Indigenous students, faculty, and allies are following them into the fight.

UNKNOWNPLEASUR

IN THE NAME OF SHARING CURRENT WORK, WE DIRECT the reader towards [an R library](#), unknownpleasur, maintained by the authors (Figure 7). This library is informed by our reflection on the directionality of the

surficial work of the Howard Fisher, read alongside the antipodal cartography of the “Universal Antipode Projection” in the context of “mapping up.” To be clear: we share this with the most modest of intentions. We



Figure 7. unknownpleasur R Library, developed by the authors.

don't share because we think it is an answer to the question of how cartographic technique might respond to our proposed methodological reorientation. We include it here because it has been one of our ways in to working cartographically with relational power.

The package takes its name from the 1979 Joy Division album *Unknown Pleasures* whose omnipresent cover art comprises a stacked chart of radio signals from the first recorded pulsar, or extremely dense neutron star.⁵ We note that one cannot observe a star without looking up, but the name followed from formal resemblance, not conceptual conceit. In building the library, we wanted to retain the volumetric and surficial interest of Fisher, while exploring the simultaneous depiction of geographies of the oppressed and geographies of oppressive systems (with obvious applicability to bivariate visualization more broadly).

We took particular note of Fischer's experimentation with elevations at intervals (Figure 8), a technique used widely in landscape architectural drawing to depict terrain, and wondered about the possibility of setting a second set of elevations orthogonal to the first, with an interval wide

enough that both retained legibility. As an experiment, we map concentration of landlords per housing unit (in green) against concentrations of evictions per rental unit (in magenta). First, each in isolation—up (Figure 9), down

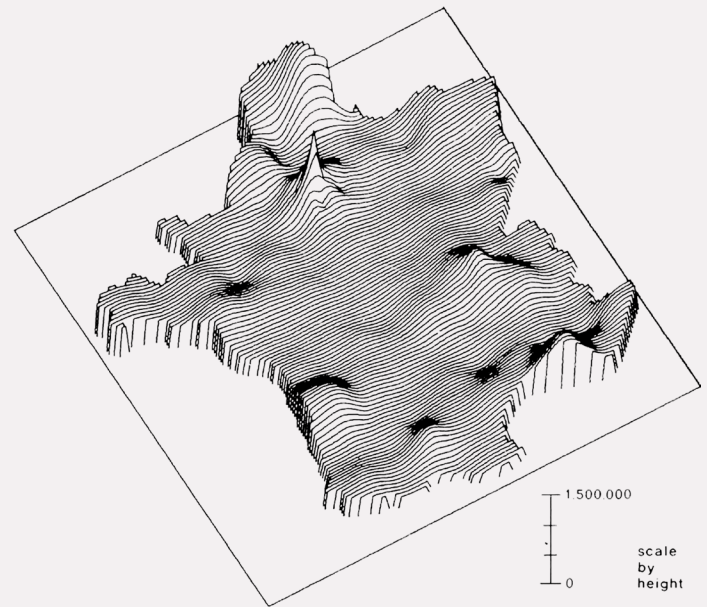


Figure 8. Map from Fisher (1982).

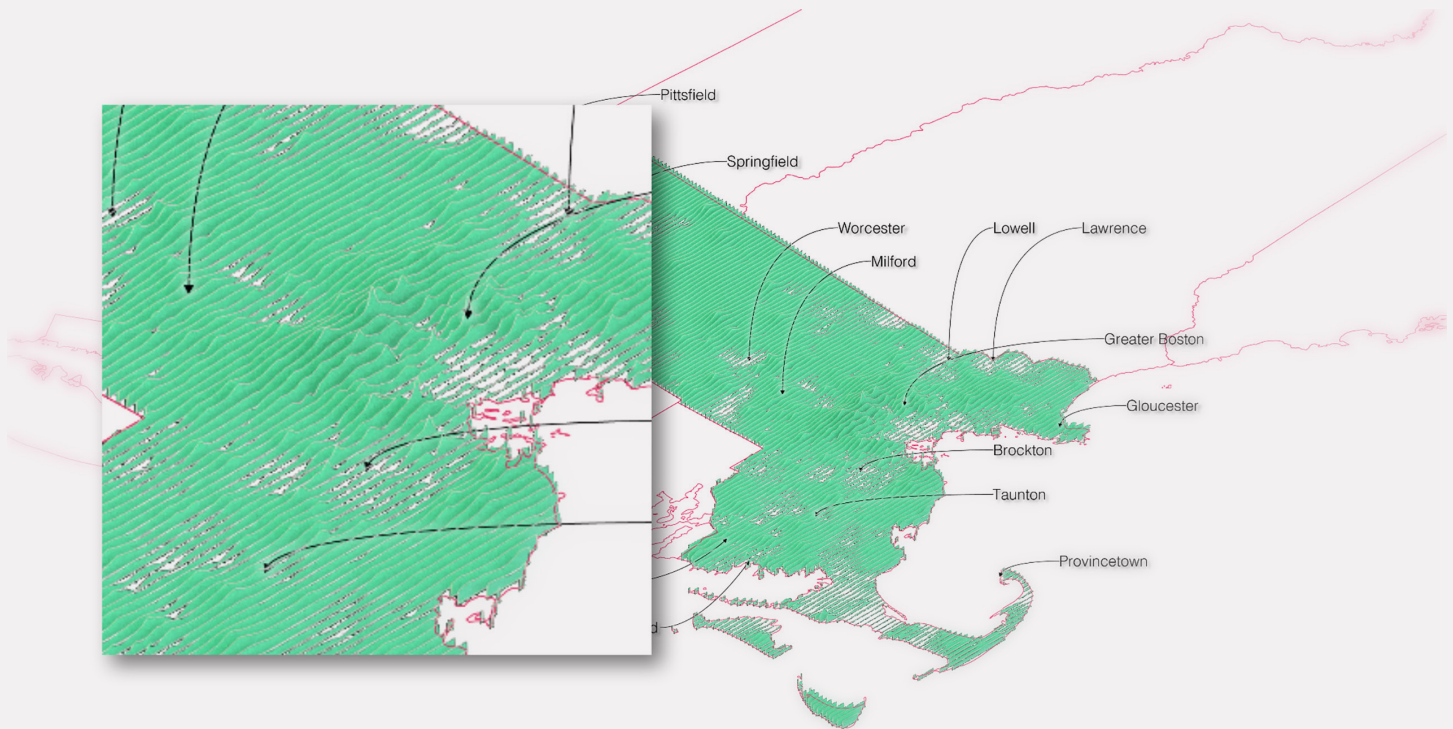


Figure 9. Mapping up, landlord addresses per housing unit in Massachusetts. By the authors.

5. The origins of the graphic have been subject to quite a lot of sleuthing. The band presented the graphic to album designer Peter Seville as it appeared in the *Cambridge Encyclopaedia of Astronomy* (Mitton 1977; see Visualized 2012), though the original graphic appears to have been from a dissertation by Harold D. Craft (1970; see Christiansen 2015a; 2015b).

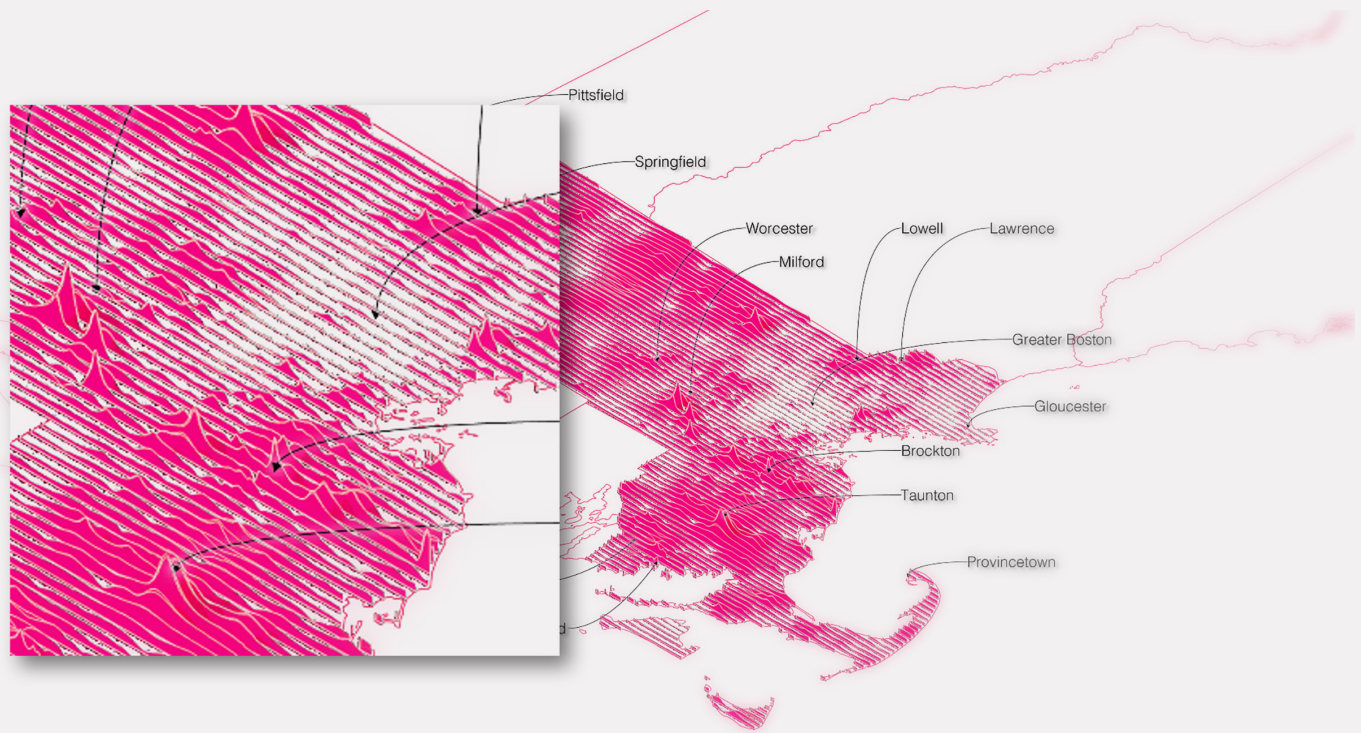


Figure 10. Mapping down, eviction filings per rental unit in Massachusetts. By the authors.

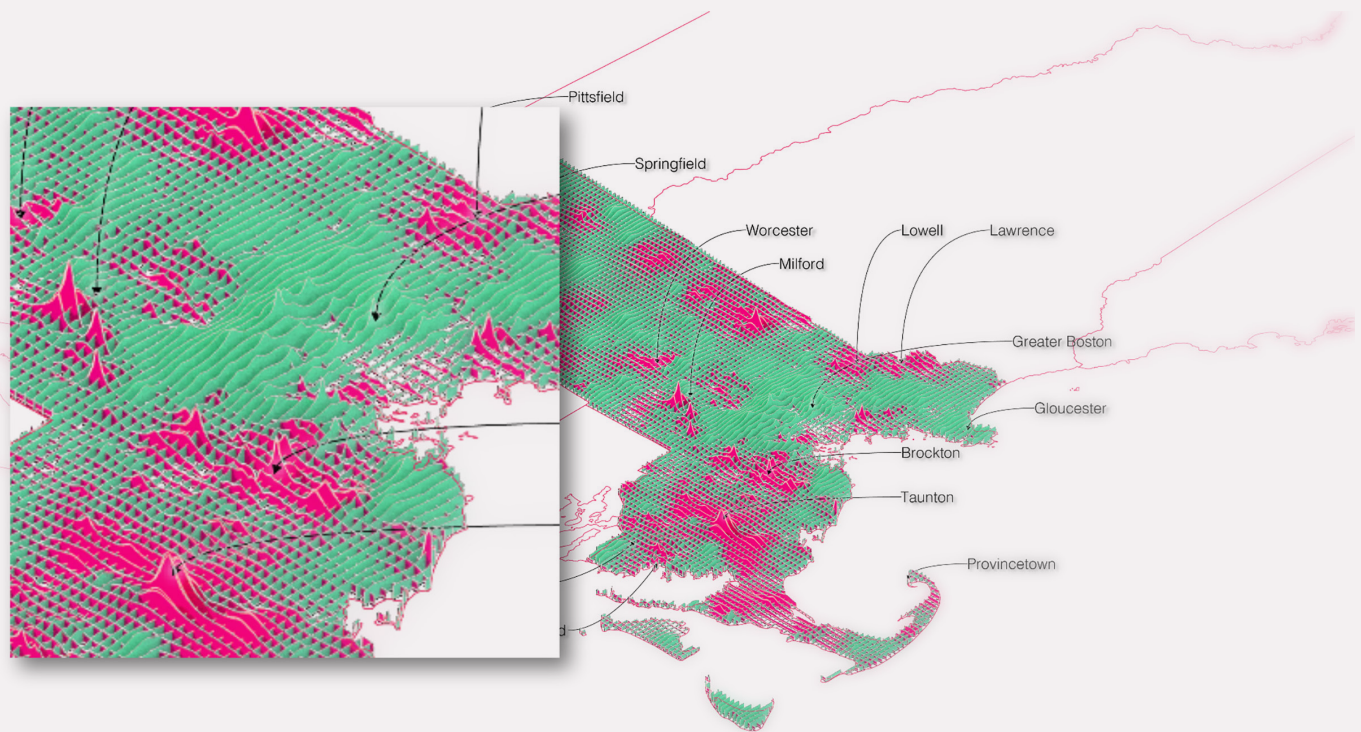


Figure 11. Mapping around, bivariate surface map of evictions per rental unit and landlord address per housing unit in Massachusetts. By authors.

(Figure 10)—and, subsequently, as a joint proposition, linking the landscape of housing precarity to the landscape of landlords and ownership (Figure 11).

In some sense, this is a response to the types of mapping that have emerged from critical literature on ownership relations. Shelton, for example, makes extensive use of the spider map, in which lines connect, for example, vacant plots to their owners, resulting in a wild proliferation of lines that speak to the multitude and geographic plurality of ownership relations. However, in the absence of an aggregating unit, those maps are limited in their reading; relations are drawn between the geographies of ownership and the geographies of vacancy, eviction, and otherwise, but the interpretation tends to be one of sheer multiplicity, rather than specific concentration. We instead articulate divergences in concentration between owners and the people they make precarious, depicting both “up” and “down” as analytical directions that are interrelated, but nevertheless subject to concentration along axes of exclusion.

CONCLUSION

In closing, and as suggested above, we note that mapping, spatial data science, and all their associated knowledges have thoroughly entered activist practice. Counter-data science and counter mapping are not a rarity but embedded in the reality of many movements. New methodological toolkits could equip those of us embedded in critical cartographic practice to address the radically multiple positionalities of contemporary mapping practitioners.

We argue that “mapping up” is one such framework that could accommodate a far less stable assumed relationship between mapmakers, power, and knowledge. Rather than taking an epistemic shortcut (the “power of the map”) to a positional question (“who is the mapmaker to the mapped?”), we might develop methodologies attentive to the range of positionalities engaged in mapping practice, and the range of powerful actors subject to scrutiny in mapping practice. None of this is to say that “up” was not always a part of feminist praxis, as a knowledge politics that is both directional and adversarial. Sandra Harding, for example, reflects that

Although standpoint methods were to start from women’s lives, they were not to end there; women’s lives were shaped by decisions made elsewhere,

While antipodal charts suggest (or can suggest) the trans-planetary reach of empire, here we are mapping an often, though not always, localized form of oppressive interrelation: evictor to eviction, up to down.

As a final (and minor) technical note, we prioritized functionality to support interoperability with Computer-Aided Drafting (CAD) and 3D-modeling software through, for example, DXF file exports (e.g., Blender, Rhino—the illustrations we provide were rendered in Rhino). Our rationale for this is to draw out a formal parallel between our “mapping up” concept and software better equipped to perform volumetric visualization than traditional GIS software. In addition to offering a new method for bivariate mapping, we take an interest in visualizations that don’t adhere so fixedly to the ground plane, an epistemic constraint that echoes throughout geographic thought (Elden 2013; Bridge 2013). “Up,” vis-à-vis power. “Up,” vis-à-vis cartography.

namely in the elite men’s worlds of public institutions. Standpoint methods were to ‘study up,’ to critically examine the dominant culture, rather than to ‘study down,’ to focus exclusively on the oppressed, as conventional social science projects often did. (2005, 354)

Nader herself argues, implicitly, that changes in the power relations of research practice and practitioners would necessarily change the theories we build and methods we deploy. In speaking of field work, she asks whether anthropologists (and we could extend this to include mapmakers)

might indeed ask themselves whether the entirety of field work does not depend upon a certain power relation in favor of the anthropologist, and whether indeed such dominant-subordinate relationships may not be affecting the kinds of theories we are weaving. (1972, 289)

Devising critical cartographic theories and methods that incorporate the possibility of a far less stable power relationship between mapmaker and mapped is a key challenge for contemporary practitioners.

In an earlier draft of this paper, we included a long section on one long-standing critique of social science: that “more research is needed” is little more than a distraction that creates ambiguity where we, in fact, know all we need to know. Ruha Benjamin, for example, argues in *Race After Technology* that “demanding more data on subjects that we already know much about is, in my estimation, a perversion of knowledge (2019, 116). Such sentiments have a long history, including in geography. David Harvey argues that “mapping even more evidence of man’s patent inhumanity to man . . . is irrelevant” and that we have “all the evidence we need. (1972, 10) Of course, “studying up” is no cure—much as we have “enough information” about inhumanity, we have “enough information” about the systems, their actors, and the incentives to which they respond. As Eve Tuck notes, “it is a powerful idea to think of all of us

as litigators, putting the world on trial, but . . . do the material and political wins come through?” (2009, 415).

Not yet, and not enough. But we are left to note that studying (or mapping) up is one of many necessary changes in mapping practice, able to accommodate a range of practitioners united by no shared program except the urgency that comes from a world on fire. We are inspired by the rapid proliferation of maps that are less interested in absolute and absolutizing claims or their opposite, destabilizing and decentering claims, than they are in practical and political efficacy. The epistemic stakes of mapping, as always, are high. But so too are the strategies, supported by methodically upward-facing mapping practice, that are increasingly embedded in movements demanding justice.

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