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Digital Cartographies of Displacement: Data as Property and Property as Data

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Abstract

This paper examines the materiality of digitally mapping eviction and landlord geographies, focusing on struggles and contradictions that critical GIS and counter-mapping collectives encounter in attempting to produce data, maps, and tools useful for housing justice organizing. I look at how public restrictions of parcel ownership and eviction data, along with limited accessibility of free and open source mapping software, often instantiate increased reliance upon technocapitalist data and infrastructure. Many of these systems are precipitative of gentrification geographies, thereby at odds with the politics of anti-displacement mapping. Meanwhile, there are a growing number of cartographic labs and companies that produce geospatial data related to evictions and property ownership, but that prioritize data accumulation and scalability over grounded housing justice. By exploring paradoxes within this space, I theorize the conjuncture of *datafied property* and *propertied data* landscapes. Homing in on San Francisco landscapes of the Tech Boom 2.0., I draw upon my own experience working with the Anti-Eviction Mapping Project and partner groups. I conclude by looking to housing justice and land rematriation practices based upon grounded relationalities – models that offer emancipatory trajectories for digitally mapping property and dispossession.

Keywords

Data, dispossession, counter cartography, technocapitalism, housing justice, digital geography

Introduction

When a handful of housing organizers sat around the table of the San Francisco Tenants Union in early 2013 in the city's Mission District, we had little sense that our project would soon become one of many endeavors to digitally map gentrification and collaboratively create platforms for resistance. Amidst the rumbling sounds of cranes and new condo development outside the old Victorian walls engulfing us, we hovered around a rickety old wooden table in a room adorned with housing rights posters, political campaign signs, know-your-rights brochures, and an array of pamphlets and paper intake forms. The room itself has always felt like an archive of sorts, particularly of 1970s-era fights for rent control and condo moratoriums, and of late-1990s anti-eviction organizing during Dot Com Boom when groups such as the Mission Anti-Displacement Coalition combatted waves of tech-induced gentrification. But we were no longer in the Dot Com Boom era during which technocapitalist, real estate, and government interests incentivized a brazen wave of racialized evictions to pave way for economic growth (Mirabal, 2009). We were now in what was slowly becoming known as the Tech Boom 2.0, or the Second Dot Com Boom, similarly characterized by the disproportionate displacement of poor and working-class Black and Latinx residents as real estate speculators prioritize creating housing for those making apps, algorithms, data storage, and software (AEMP, 2021; Walker, 2018).

Yet the eviction tactics of this current era appeared different than those prior. New housing ownership and acquisition structures modeled off of post-2008 corporate real estate trends had begun to shift real estate landscapes, with large and mid-sized investment companies using anonymous sounding limited liability companies (LLCs) and limited partnerships (LPs) to purchase buildings and evict tenants (Akers, Seymour, Butler, and Rathke, 2019; Ferrer, 2021; Fields, 2018). These opaque corporate ownership structures resulted in increased difficultly for housing organizers and tenants in identifying evictors and thus effectively organizing. This was why we were gathered in the tenant clinic surrounded by the ephemera of an ongoing housing justice movement. Together, we were hoping to create geospatial data to make obtuse corporate landlord structures and evictions more accessible.

At the time, we had no inkling that our early endeavors to unveil the opacity of corporate landlordism would soon become a larger project, now known as the Anti-Eviction Mapping Project (AEMP) – a counter cartography, storytelling, and digital media collective documenting dispossession and creating tools for resistance. When we began, there were just a few of us endeavoring to create one or two maps. Since then, we have grown three volunteer-led chapters in the Bay Area, New York City, and Los Angeles which, in addition to creating maps and data analysis, produce oral histories, community events, videos, murals, zines, reports, and an atlas (AEMP, 2021; Graziani and Shi, 2019; Maharawal and McElroy, 2018). We have also found ourselves inspired and abetted by, and at times in conflict with, a growing constellation of projects digitally mapping evictions and property ownership across the US, as well as an ever-expanding ecosystem of cartographic software. While many groups mapping placement and displacement are grounded in local movement-based work, others are more oriented towards creating national databases, consumerist scalability, and/or proprietary software. While these larger projects can be helpful, they can also engage in extractive data acquisition processes all the while universalizing methods of data interpretation and bolstering infrastructures of dispossession.

These risks point to the blurriness between the ownership of data and the possession of land/housing, particularly when engaged in landlord, gentrification, and eviction mapping. Data is, as scholars have well illustrated, spatial, with its production, storage, hosting, and computing unevenly requisite upon mineral extraction and surrogate labor, while productive of toxic waste, environmental racism, and exploitative geographies (Atanasoski and Vora, 2019; Kitchin and Lauriault, 2019; Mattern, 2020; Pellow and Park, 2002; Vgontzas, 2022). In Elizabeth Povinelli's words, "the ability to hinge information to place is mediated by a specific set of demanding environments and the institutions that support them" (2011). Data acquisition thus bears the potentiality of inhering spatial dispossession, the

latter also engendering contexts for the former. As Katherine McKittrick articulates: "Land grabbing is a self-replicating system that provides the avaricious conditions for the data grab…. The task of the data grabbing is to remake our sense of place, heartlessly" (2020, 109). Put differently, the materialization of data grabbing both requires and reproduces dispossession.

Indeed, data commodification is a geographic phenomenon, one whose epicenter of accumulation often gravitates towards the San Francisco Bay Area and Silicon Valley – a spatial, material, and imaginative techno-imperial locus (McElroy, 2019). Building upon post-Cold War consumerist technology, Tech 2.0 data grabbing practices and attendant geographies of gentrification recode the logics of Spanish colonization, the Gold Rush, and US empire – all reliant upon the theft of Native lives and land along with racially dispossessive labor and infrastructure practices (Karuka, 2019; Pellow and Park, 2002). Today's Silicon Valley imperial logics protract colonial property relations and racial capitalist geographies despite and alongside powerful landback and rematriation projects (Gould, 2021; Ramírez, 2020). In this way, the predation of data is intimately bound up with the cooptation of space, reproducing what Cheryl Harris describes as the "whiteness of property" in which "racially contingent forms of property and property rights" have been constituted through conquest and slavery (1993, 1709). Technocapitalist growth in the gentrifying Bay Area updates this property-making history, so that *data becomes property* while *property becomes data*.

Amidst this datafied propertied conjuncture, the AEMP has found it contradictory to rely upon infrastructure, algorithms, data, and platforms constitutive of dispossession in our own mapping work. Haunted by Audre Lorde's oft-cited argument that "the master's tools will never dismantle the master's house" (1984), we have been struggling to find a way out. In illustrating this difficulty, here I engage with what Stuart Hall and Doreen Massey describe as "conjunctural analysis," or a means of studying how "social, political, economic and cultural contradictions" are articulated in order to produce particular geographies, while also charting how alternative political projects might generate other spatialities (2010, 57). Rather than pretending to have the perfect solution for divesting from all corporate tech and data systems, I mobilize conjunctural analysis to map an array of problem layers. In doing so, I draw upon my own experiences in AEMP, as well as literature from the fields of digital geography, urban geography, critical geographic information systems (GIS), feminist studies, and counter-cartography.

In what follows, I chart corporate property ownership data landscapes that tenants struggle to uncover in their anti-eviction organizing. I then explore a range of digital mapping and data projects aimed at making these complex data worlds accessible, some of which, such as Regrid and the Eviction Lab, continue to "datafy" property and "propertize" data. Through conjunctural analysis, I then turn to platform contradictions, looking at how housing justice mapping projects, including the AEMP, are often forced to use technologies materially precipitative of dispossession. Lastly, I focus upon housing justice and land rematriation projects rooted in the caregiving work of undoing property, suggesting that those of us grappling with datafied property and propertied data can learn much from these projects' politics and positionalities.

Unveiling Corporate Ownership

When first launching the AEMP, collective members, myself included, were determined to find a way to make landlord structures more accessible to tenants and housing organizers. At the time, I was also part of a mutual aid group, Eviction Free San Francisco, in which tenants supported each other's eviction fights. Yet often enough, those facing eviction were unable to determine who their actual landlord was. I'll never forget when Benito Santiago, a senior tenant, dance teacher, drummer, public educator, and soon-to-be friend showed up to one of our meetings in 2013 after having received an eviction notice from the bizarre-sounding shell company, Pineapple Boy LLC. "I thought it was a joke!"

he exclaimed upon recounting receiving his eviction notice by what we later determined to be the shell company of a man named Michael Harrison, cofounder of a large real estate company, Vanguard.

Contexts such as this propelled AEMP's early work as we endeavored to unveil corporate evictor structures and undo the anonymity that shell company LLCs and LPs provide. Today, San Francisco is home to a number of large investment companies that trump Harrison/Pineapple Boy in scale, including Veritas Investments, Ballast Investments, Mosser, and Trinity, all of which have purchased dozens if not hundreds of rental housing units with tenants already living in them, each through a unique shell company name. This widespread investment strategy follows a general post-2008 trend, in which Wall Street investment firms such as Blackstone and Invitation Homes purchased vast amounts of single-family homes foreclosed upon in the racialized subprime crisis, converting them to single family rentals (SFRs) while instantiating a novel propertied finance empire globally (Fields, 2018; Rolnik, 2019). Smaller investment firms then followed suit, not only purchasing SFRs but also multiunit rent-controlled buildings (Ferrer, 2021).

The firms profiting from this trend gain particular financial benefits by using LLCs and LPs. Yet they also have the advantage of anonymity, and thus, at times, impunity from tenant organizers working to hold them accountable. Tenants have therefore begun to conduct property research themselves in order to unmask corporate landlordism, triangulating whatever datasets they can get their hands on. These range from rent board eviction data and court filings—the former only available in some rent-controlled cities in California, the latter harder to access due to statewide laws designed to protect tenants from the predatory tenant screening industry (though this data is more accessible in other states) (Sabbeth, 2021). Also useful to tenant researchers is parcel ownership data from county assessor offices, as well as Secretary of State corporation filings and city-level permit and code violation data. Yet all of these datasets are difficult to process and even more arduous to merge, particularly due to the recursive nature of corporate ownership in which one LLC can be the parent company for another. Despite data difficulties, tenants have found analog ways to recover and scrape partial datasets, ground-truthing them based upon their own housing and organizing experiences. Property research such as this bolsters tenant-led rent strikes, tenant associations, lawsuits, demands, and reclamation projects.

In this spirit, the AEMP has, upon its foundation, produced dozens of static webpages on Bay Area serial evictors. These pages put faces and names on evictor networks, listing their associated LLCs/LPs, eviction histories, and properties. More recently, the AEMP has developed a San Francisco-based look-up tool, Evictorbook, made in partnership with the San Francisco Anti-Displacement Coalition and the Mapping Action Collective. It employs a graph database to join eviction data obtained from San Francisco's rent board, property parcel ownership data obtained from the county assessor's office, and corporate ownership data obtained from the Secretary of State, so that tenants can better understand the web of ownership and shell companies that specific evictions comprise (McElroy and Amir-Ghassemi, 2020). As I continue to explore, other groups across the country are producing similar tools and databases given the profuseness of corporate landlordism and eviction.

Mapping Evictions

Today, the AEMP is only one of many collectives and projects digitally mapping evictions and property ownership for housing justice. From Property Praxis in Detroit, which maps real estate speculation amidst the region's foreclosure crisis (Akers, Seymour, Butler, and Rathke, 2019), to JustFix.nyc's Who Owns What, which tracks building ownership and eviction history in New York City, the landscape is rich. There is SAJE's Own It platform in Los Angeles, the Find My Landlord in Chicago, Durham Data Works in North Carolina, Landlord Watchlist Project in Pennsylvania, and more. Beyond the US, project such as the Evictions Observatory in São Paulo to the Missing Basti Project in Delhi are also producing digital cartographies to empower on-the-ground tenant organizing with eviction data.

While embedded in this network, the AEMP is also situated in an ecosystem of community-based counter-mapping groups such as the Counter Cartographies Collective, Iconoclasistas, kollektiv orangotango, Native Land Digital, and more. These create participatory geospatial knowledge and databases grounded in antiracist, feminist, and decolonial cartographic futures (Dalton and Stallman, 2018; kollektiv orangotango, 2019). This space has been growing daily, with a burgeoning group of mappers, coders, and designers who, in Sarah Elwood's words, "refuse normative digital-social-spatial relations of technocapitalist urban life, and catalyze sociospatial relations of thriving otherwise" (2021, 209).

At the same time, there are a growing number of digital platforms that map evictions and property ownership which are less rooted in local organizing contexts and less if, at all, committed to the project of abolishing colonial data regimes. For instance, projects such as the Eviction Lab, based out of Princeton University, and the company, Regrid, based in Detroit, offer national geospatial data sets about evictions and property ownership respectively. While these projects are often useful for local organizers across the US, by prioritizing scalability, they run the risk of compressing and poorly translating geospatial housing differences while eliding grounded movement-based work and knowledge (McElroy and Werth, 2019). Rather, priority is based upon filling the boundaries of polygons and scaling up.

The well-funded Eviction Lab, founded in 2017 by sociologist Matthew Desmond, has become an authority regarding eviction data across the US. To its credit, the Eviction Lab team has built an invaluable digital mapping tool that makes accessible eviction data that was previously often extremely difficult to obtain and analyze. Reasons for this difficulty vary, ranging from local administrations lacking the capacity to record eviction data to state laws that keep county-level eviction data private in order to protect tenants from having their data used by tenant screening companies—a common practice throughout the US often used to reproduce exclusionary housing domains along with cycles of dispossession, carcerality, and debt (Kirchner and Goldstein, 2020; Oyama, 2009). Eviction Lab often circumvents the difficulty that tenants face in obtaining eviction data by purchasing data directly from third-party brokers, and then aggregating it within census boundaries on their website. As of 2021, they have accumulated over 80 million eviction records comprised of court data from twelve states, and the rest coming from the data brokers American Information Research Services Inc. (AIRS) and LexisNexis (Eviction Lab, 2021).

In addition to purchasing data from brokers (which also supply tenant screening companies with data), the Lab has, at times, endeavored to incorporate smaller groups' data, such as the AEMP's, into its massive database. When Lab assistants reached out to the AEMP requesting our data in 2017, we hesitated as we wanted to first have more conversations about data protection and credit. Yet rather than enter into dialogue, the Lab decided that it would be easier to purchase $100,000 worth of eviction data from AIRS. However, AIRS' eviction tally, obtained by scraping partial data from digitized court records, undercounted the number of evictions across California per court records themselves. According to the Lab, 1,440 eviction filings took place in 2014 in San Francisco and 1,347 in 2015 (Aiello et al., 2018). Conversely, data from the AEMP and Tenants Together obtained through amalgamated court data requests revealed 3,310 evictions in 2014 and 3,512 in 2015—more than double that counted by the Eviction Lab (Inglis and Preston, 2018).

Posting bad eviction data undermines local campaigns for rent control and the like, but further, Desmond himself has given talks in cities such as Portland in which he has discounted local eviction counts and instead championed his purchased data (Aiello et al., 2018). Because the Lab is considered an expert on evictions due to its scale and publicity, and because it fails to maintain grounded community partnerships with movement-based groups in all the cities it maps, such elisions are likely to continue. Desmond's authority becomes even more troubling when he endorses particular policies and electoral campaigns. For instance, in 2020, he supported presidential contender and New York City's former

mayor, Michael Bloomberg, who, to the chagrin of housing organizers, has maintained a long history of unfriendly tenant housing policies (Gowan, 2020). While my purpose here isn't to berate the Lab or Desmond, these issues do bring up interesting questions around scale and authority, particularly when both rest upon capital to purchase expensive data and digital infrastructure.

Open Property Data

The Eviction Lab is far from the first project that has digitally mapped big data to foster housing data knowledge. Regrid (formerly known as LandGrid, LoveLand, and WhyDon'tWeOwnThis) offers paid use for owner information on parcel ownership data in the US. As advertised, they own data on 150 million parcel boundaries in the US, totaling 99 percent of "US population coverage" (Regrid, 2021). This clean, standardized, and sanitized data can be used for "arming people with information to battle a plague of tax foreclosures and running an ongoing survey of property conditions to help fight blight" (ibid, 2021). With a variety of data, application programming interfaces (APIs), and tile server packages ranging from $0 to $50,000 annually, it offers both "Data as a Service" and "GIS Software as a Service." Access to such data can be helpful for housing organizers needing to determine landlord identities information, especially when obtaining such data from county assessor offices proves expensive or impossible. And yet Regrid also maintains a history of propertizing data and datafying property.

Regrid was created by tech entrepreneur and real estate "innovator" Jerry Paffendorf in 2009 when he and a few friends moved to Detroit with the notion that anyone should be able to "inchvest" one square inch of Detroit for $1. His first site, WhyDontWeOwnThis, made use of Wayne County foreclosure data and Google Street View, and came out of the city's Blight Removal Task Force (Wilson, Launias, and Boyce, 2018, 59). The data from this project, which would soon become LoveLand, aimed to provide Detroit leaders with an accurate picture of "urban blight" through crowdsourcing. It would also help Paffendorf's friends inchvest, while enabling residents facing foreclosure to purchase their homes back through auction. Yet as Craig Dalton and Tim Stallman have critiqued of Paffendorf's project, "Well-meaning data science can even perpetuate processes which exacerbate inequality and exploitation, often due to technologically led, generic top-down programs working through government agencies or for-profit corporations, even with volunteered or crowdsourced data" (2018, 94). As Dalton and Stallman discovered, Wayne County never allowed people to purchase their homes back, despite Paffendorf's claims.

Paffendorf, however, was not dissuaded. In 2014, he began contracting with the Motor City Mapping Project, funded by Dan Gilbert and staffed with "volunteers" from Gilbert's Quicken Loans – one of the US's largest mortgage brokers also responsible for one-fifth of Detroit's foreclosures during the subprime crisis (MacDonald and Kurth, 2015). Supported by LoveLand and the US government, Motor City Mapping began crowdsourcing data through a mobile "blexting" application, a neologism of blight and texting, to help "solve" the city's "blight problems" (Wilson, Launias, and Boyce, 2018, 46). In the end, 385,000 properties were surveyed (JP Morgan Chase, 2015).

Since then, Paffendorf has been developing "X-ray glasses" to abet property surveying – effectively recoding the long tradition of surveys themselves functioning a technology of colonial space-making (Blomley, 2003). He also updates a thick history of civic engagement in policy making, a practice that Shannon Mattern historicizes as having split into two genres: government and private firm utilization of "maps, models, games, and other playful methods to solicit and validate public spatial knowledge, which supposedly informs their designs," and community crafting of "radical cartography projects, rogue planning departments, squatters' collectives, and so on — to counter official plans and create their own designs for spaces that are not official priorities" (2020). Critiquing Sidewalk Lab's utilization of participatory mapping in Toronto to further Google-led corporate surveillance and gentrification, Mattern writes that "the old tools of participatory design, like the survey and the map, have little value where

automated data extraction feeds directly into algorithmic urban engineering" (ibid., 2020). Along these lines, Bianca Wiley argues that projects such as Sidewalk Lab participate in a form of "engagement theater" more invested in the spectacle of participation than grounded community-led involvement (qtd. in Mattern, 2020).

The same can be critiqued of Regrid. Yet Paffendorf stands by his work, which he frames as a "social good" project to make parcel ownership information transparent. In his words, "The parcel is the most fundamental unit of how we organize and divide the earth. The U.S. was the first country founded on private property. We were also the first country built on public information" (qtd. in JP Morgan Chase, 2015). While this logic posits that public information can help undo problems inherent in private property, Regrid's data costs money to access. As of late, it has begun to deploy land acknowledgement labels for parcels in recognition of the ongoing violence of settler land theft, yet the project is far from decolonial in nature as it continues to reify private ownership economies – in this case, datafied property that becomes propertied data. This practice is not so dissimilar from Google's own "technoliberal" attempt to commodify Native place names in ways antithetical to Native spatial justice struggles while serving as a political alibi for racial capitalist place-making (Atanasoski and Vora, 2019, 4; Iralu, 2021). In their critique of Regrid, Jeffrey Wilson, Sarah Launias, and Geoffrey Alan Boyce write, "Paffendorf's narrative and reference to 'X-Ray glasses' suggests a kind of cartographic positivism – as though the digital platforms he has pioneered are capable of revealing a deep 'truth' underlying the surface of things – the way the world really works. The claim that the 'the world is made of parcels' is astonishing for its ontological projection of a techno-methodological artifact that is in fact only capable of slicing the world in particular ways" (2018, 64).

Cartographically, Regrid's maps, much like the Eviction Lab's, reproduce a long lineage of geospatial violence rooted in racist spatiality and positivism. As Wilson, Launias, and Boyce write, Regrid's "framework eschews reflexivity on the consequences of digital knowledge production and data representation, instead positioning them as inherently benevolent instruments for better decision-making by city government, citizens, economic planners and investors alike" (2018, 65). Projects such as this are, in other words, caught up in practices of universalizing data collection and interpretation, reproducing problems of big data and "objectivity at a distance" (Haraway, 1988; Wyly, 2014). These projects also reveal the trouble with producing maps inattentive to how social relations and cartographic practices cocreate space (Massey, 1991; Shelton, 2017). Land acknowledgements are therefore not enough when the materiality of one's project contributes to the ongoing enclosure of data and settler colonialism (Iralu, 2020; Povinelli, 2011). This is not to say there is no merit in creating national or comparative data sets, but rather that, in doing so, there are perils of superseding local spatial knowledge and crafting topographical fictions.

Projects such as Regrid lay bare some of the complexities of data privacy in the age of open data, smart cities, platform governance, and digital civics. Today, there are numerous municipal open data platforms crafted under the pretense that better and more open data will help transform urban governance for social good. Yet they often black box knowledge regarding how data collection decisions are made and what genres of data are permitted to be public (never mind who counts as a citizen) (Mattern, 2020; Shelton, 2018). On top of that, many cities' urban dashboards incorporate corporate software and tools forged through private-public partnerships. For instance, Regrid's web interface has shaped the Detroit Open Portal, informing a local joke that Regrid effectively functions as the city's IT department. As Wilson, Launis, and Boyce write, Detroit's open data portal was "borne from public-private mapping and blight management efforts," yet "remains sluggish compared to the LoveLand platform and does not layer or bound information as effectively" (2018, 64).

This trend can be said to mark the corporatization of data hosting, or the phenomenon of corporations replacing the state when it comes to platforms for big data collection, data hosting, and

spatial information provision. As James Ash, Rob Kitchin, and Agnieszka Leszczynski note, the profusion of "smart city" development and neoliberally-funded data-driven urbanism make requisite the need to examine "the ownership and control of data; the integration of data within urban operating systems, control rooms, and data markets; data security and integrity; data protection and privacy; data quality and provenance and dataveillance" (2018, 37). There is also an imperative in mapping out the ways in which platforms mediate how "knowledges are constructed, communicated and debated, as well as the material spatialities and geographies of their production, transmission, and appropriation" (ibid.: 35). Urban data platforms and interfaces give the illusion of municipal transparency but obscure black boxed decision-making as to what data is made public and operationalized, and what data is not collected and/or hidden from public view.

For instance, the city of San Francisco now makes eviction petition data available on its open data government site, but actual addresses and geolocations are obscured. While this is likely in part done to protect tenants from the screening industry, it is likely also a way of protecting landlords whose names are also strategically scrubbed from the data. Landlord names are also noticeably scrubbed from eviction petition data returned upon public record requests. That said, very few cities, counties, and states nationwide make their eviction data as accessible as San Francisco, and some that do are havens for tenant screening. Meanwhile, property parcel ownership information can be obtained from San Francisco and Alameda counties' assessors' offices, but anything up-to-date costs thousands of dollars. When data requests are made and data is purchased, it is often messy and complexly coded. All of this points to how Eviction Lab and Regrid are useful services, as their data is downloadable, sanitized, and accessible. Yet, the former can be inaccurate and isn't granular (effectively protecting landlords and tenants alike), while the latter can be costly. Neither reveals corporate ownership structures or serial evictor geographies.

Platform Contradictions

While the division between groups such as the AEMP and those like Regrid appears stark, particularly when it comes to groundedness in community-led efforts to stop evictions (not to mention monetary imperatives and organizational structure), both often do rely upon similar geospatial tools and geospatial data hosting services packaged by companies such as Carto, Mapbox, ESRI, Google, Amazon, and more (albeit often with vastly different subscription levels). Some of these mapping tools mobilize and incorporate use free and open source software (FOSS), yet most are corporate and amass capital or attract venture capital by selling software packages to individuals, companies, institutions, and more. This operates under the logics of data capitalism, in which propertied data is understood as both a currency and an extractable location (Alvarez León, 2016; Zook and Graham, 2007). Meanwhile much of the infrastructure supporting these companies is tethered to Silicon Bay Area geographies of dispossession. What does it mean then for a Bay Area-based housing justice data and mapping collective such as the AEMP to deploy some of the very digital technologies and platforms implicated in local circuits of racial capitalism, colonialism, and tech-induced gentrification that it maps against?

This conjuncture transpires upon an expanding geography of digital proprietary mapping platforms over the last decade in which GIS has become reliant upon software coding knowledge and digital infrastructures (Ash, Kitchin, and Leszczynski, 2018; Kitchin and Lauriault, 2019), often creating entry barriers familiar in STEM and software development worlds (Noble and Roberts, 2019). Yet often, digital mapping platforms also create software as a service (SaaS) applications that enable users without extensive training to upload data and relatively quickly produce a web map. For many, housing organizers included, SaaS infrastructure, in combination with open and easier-to-use platforms such as QGIS, enables the production of what Jen Jack Gieseking refers to as "good enough" software which bypass the need for elite training environments and access (2018). Availability of such platforms thereby undoes some of the racial and gendered hierarchies engraved into software development worlds.

Despite offering increased accessibility, most corporate web mapping SaaS platforms embody antithetical politics to groups such as the AEMP. These range from lack of language and translation options for map tiles, reinforcement of colonial borders and toponymies, limits on free data storage, corporate branding, and lack of privacy and/or lack of clarity around privacy, to name a few. As David O'Sullivan criticized over a decade ago of ESRI (which has maintained a monopoly on digital mapping for decades), "At the prices ESRI charge for their software, it is hard to see how the technology can empower anyone not already empowered!" (2006, 789). A similar assessment can be made of Amazon Web Services (AWS) hosting services, Google's geolocation services, and newer largescale mapping platforms such as Carto and Mapbox that accommodate corporations' development teams. As Taylor Shelton notes, these platforms can easily be used to produce aspatial Cartesian cartographies that over-privilege certain information at the expense of other geographic knowledge (2017, 724). These systems, put in another way, are divorced from the spaces, histories, communities, and epistemologies that they map.

Although we at the AEMP share this critique, we have also grown accustomed to corporate platforms, such as Carto, which are generally easier to use for housing organizers and tenants untrained in software programming. As the AEMP is a collective of housing organizers, artists, media-makers, cartographers, researchers, and developers, many of our members don't engage with software development, corporate or FOSS—both bearing white cis-heteromasculine histories in the Bay Area (Coleman, 2012; Liu, 2020; Noble and Roberts, 2019). Further, as a volunteer-led project driven by the need to produce maps and tools on tight turnarounds in order to help stop evictions, it has been difficult for the AEMP to prioritize creating entirely independent software and storage solutions, never mind adequately mentoring all of our members on FOSS development. Even those of us with open source knowledge are often challenged to find paths completely clear from corporate tools. This isn't to say that free and open alternatives don't exist, but rather that we are still struggling to completely divorce ourselves from corporate infrastructures. While we have been inspired by antiracist, feminist, and decolonial computing committed to undoing the dominance of Silicon Valley companies and technocultures (Chan, 2014; Amrute and Murillo, 2020), we've also found that oftentimes, the more work we dedicate towards freeing ourselves from corporate dependencies, the less time that we, as a group of volunteers, have to produce timely work for housing justice.

These constraints have meant that we do still rely upon software made by companies such as Carto even when we do also integrate FOSS tools. Our first map, for instance, which charted the accumulation of evictions in San Francisco and which intentionally open-source D3 and Leaflet libraries, also relied upon Carto for data hosting. Carto (previously CartoDB), first launched in Spain in 2011, offering free plans for hosting up to 50 megabytes of data while also functioning an open source web-mapping and data storage SaaS platform built on PostGIS and PostgreSQL. Then, in 2016, they changed their name to Carto and adopted the tagline, "predict through location," catering more towards business users and eliminating the scholarship program that they had previously offered. Today they promote big data integration and location intelligence powered by Microsoft Azure cloud technology. They also work with smart city developers, creating smart city dashboards and powering massive real estate investment companies such as Jones Lang LaSalle, Inc. This technocapitalist migration has made us increasingly critical of using the platform, though weaning off it has proven challenging.

Carto is not the only corporate platform tethered to local contexts of gentrification that we are trying to detangle from. ESRI, which itself has been behind an eviction in Redlands, California (Emerson, 2014), maintains similar smart city ideals and has gone as far as to create a crowdsourced application for "blight reporting," not so dissimilar from Regrid's early ventures. While the AEMP would never use such an application, we have used ESRI products for story-mapping given its accessibility. We did stop using it in 2021 however when we became aware of their predictive analytics and location intelligence

partnerships with law enforcement (ESRI, 2022). Meanwhile, GitHub, where the AEMP hosts collaboratively produced code, has been bought by Microsoft, and as of 2019, has been the site of protest by its own employees for collusion with Immigration and Customs Enforcement (ICE) which regularly rounds up undocumented immigrants for deportation, directly facilitating processes of racial dispossession across the US. As of 2021, ICE has also been working with LexisNexis (Biddle, 2020), the primary data brokerage firm used by tenant screening companies and projects such as Eviction Lab. While critical of such collusions, the AEMP has also been self-critical of our own reliance upon AWS, which we use to host Evictorbook's graph database. After all, Amazon, like Microsoft, has been a major force of gentrification in Seattle, San Francisco, and other campus cities (Elwood, 2021, 215; Mirabal, 2009; Walker, 2018). It has also supplied at least 2,000 law enforcement agencies with data obtained by its Ring cameras all the while viciously suppressing its own exploited workers' attempts to unionize (Lyons, 2021; Vgontzas, 2022).

Given that so many of today's digital maps and platforms facilitate the territorial expansion of these companies, critical GIS requires engaging with the materiality of such entanglements – theoretically but also methodologically. Conjunctural analysis points to the productive tension materialized by engaging in this work, while helping conceptualize mapping practices untethered to racial capitalist geographies that housing justice projects, for the most part, are working against. It also acknowledges organizing imperatives of creating maps with fast turnaround times freed from elite development worlds and their technocultural bottlenecks.

Grounded Relationalities

The field of counter-mapping has long been one interested in appropriating government and corporate tools for more emancipatory means, grounded in movement-based knowledge production and anti-imperialism (Elwood, 2006; kollektiv orangotango, 2018; Peluso 1995). The modern history of mapping and GIS is, after all, one of colonialism, governmentality, and property-making. For centuries, counter-mapping and critical GIS have worked against these histories, generatively opening up and realizing other spatial worlds by weaving critical ideas and revolutionary practices together (Ash, Kitchin, and Leszczynski, 2018; Dalton and Stallman, 2018; Gieseking, 2018). Yet counter-mapping projects also bear the risk of reproducing data grabbing practices while being grabbed by capitalist infrastructure. As Elspeth Iralu warns, while "counter-mapping refers to cartographic work created in opposition to colonial cartography . . . by working within the terms and framing of colonial cartography, it is always at risk of cooptation" (2021, 1487). Perhaps what keeps a counter-mapping in check then are the grounded relationalities and politics that particular projects maintain.

Jodi Byrd, Jodi Melamed, Alyosha Goldstein, and Chandan Reddy describe grounded relationalities as requiring relationship with the land itself (2018, 11). Grounded relationalities, they write, offer alternatives to the economies of dispossession tethered to the afterlives of settler colonialism and chattel slavery. These afterlives fuel the logics of what they describe as "propriation," or "a conception and practice of the proper, propriety, proprietorship, and proprietary claims that instantiates property as a relation to private and public" (ibid.: 3). Put in another way, grounded relationalities work against the protraction of propertied ontologies across public and private domains alike, productive of a politics "under which Indigenous sovereignty and Black reparations movements can (re)build capacities for relationality (aberrant to logics of propriation)" (ibid., 11). This politics is one in which landlordism, itself a product of feudalist, patriarchal, colonial, and racial capitalist land relations, is abolished. Arguably it is also a politics against data grabbing and its technoimperial infrastructural manifestations.

In the realm of counter-mapping for housing justice, there might be much to learn from housing organizers already engaged in decommodifying, rematriating, and collectively stewarding land and housing. For instance, in Oakland, the Moms4Housing movement formed in 2019 after four unhoused

Black mothers reclaimed a vacant property owned by Wedgewood at 2928 Magnolia Street. Their movement has since blossomed, forming a powerful movement against anti-Black real estate speculation and houselessness regionally. By reclaiming the corporately owned building, the Moms successfully withdrew the property from the investment company, Wedgewood, to instead work with the Oakland Community Land Trust to create community-controlled housing and geographies of care. Their tactics in many ways build upon those such as Benito Santiago who, after winning his eviction fight against Pineapple Boy LLC through direct action and community-based research, worked with the San Francisco Community Land Trust to ensure a lifetime lease for himself and his neighbors, in turn preventing his building from going back on the speculative market.

This housing reclamation work is kindred with land rematriation projects such as the Sogorea Te' Land Trust, an urban Indigenous feminist land trust based in Huchuin – the ancestral unceded Ohlone homeland of the Confederated Villages of Lisjan (today known as the East Bay). The Sogorea Te' Land Trust works to heal propertied violence and restore Indigenous sacred ancestral land relations. Founded by Corrina Gould and Johnella LaRose, the project re-envisions what it means to live on Ohlone land. This includes protecting ancestral burial sites known as shellmounds today threatened by gentrifying development projects, and before that, through university-led anthropological exploitation in which Native bodies and sacred spaces were reduced to data objects by the University of California, Berkeley and San Francisco State University (Gould, 2021). In this sense, ancestors themselves have become datafied property and propertied data through a process similar to what Aimé Césaire nominates "thingification," or a technology of colonial appropriation and objectification (1972: 42). It is the work of the Sogorea Te' Land Trust, as Margaret Ramírez puts it, to disrupt "how property functions materially and discursively as a colonial construction of space" (2020, 688).

The Sogorea Te' Land Trust, the Moms4Housing movement, and the organizing work of Benito Santiago with Eviction Free San Francisco offer crucial lessons to projects committed to undoing the violence of propertied data and datafied property. This collective work illustrates the grounded politics necessary for materializing land and housing relations beyond those of dispossessive materialities and thingification. To create data and maps for housing justice requires adherence to these politics, engaging in more than solely stitching Native place names upon proprietary data packages (as Regrid does), and more than simply purchasing eviction data from brokers to be displayed through universalist mapping methods haunted by the specters of colonial toponymy and geospatial technologies. At the same time, only relying upon open data and open software is not enough. Rather, lessons from this propertied data and datafied property conjuncture reaffirm the importance of grounding in movement work rooted in decolonial and abolitionist future-making. As Ananya Roy argues in her feminist call to undo property, "To wage feminist struggle in the time of abolition is to refuse to fit under the lease. It is, in the settler present, in the postcolony, in the afterlife of slavery, to refuse to recognize the damn lease" (2021).

The call to undo property is just as applicable to data and mapping infrastructure as it is to landlordism and leases. It inheres a commitment to creating alternatives akin to what Gieseking describes as "an operating system of our own" that would "dismantle the master's house by making our own tools, in so far as this is possible under the racism, heteropatriarchy, colonialism, and ableism that shapes code" (2018, 65). Such an operating system would, to once again invoke Lorde, "bring about genuine change" (1984, 3). It is the work of critical GIS, counter-mapping, and conjunctural analysis to map the contradictory landscape of datafied property and propertied data, but also to engender genuine change by nourishing grounded relationalities committed to undoing property.

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