Toward a Fourth Generation Critical GIS: Extraordinary Politics

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Abstract

This collection illustrates diverse trajectories of critical GIS praxis that advance social and spatial justice in the current conjuncture. Justice-seeking politics rendered with spatial data and technologies confront social, political, epistemological violences that are frighteningly consistent across time and space, even as their digital and data techniques have shifted. Critical GIS praxes that confront these violences are coalescing a vitally important fourth generation of critical GIS that advances an extraordinary politics of theory and grounded knowledge making that exceeds the limits and legibilities of racial capitalism, settler coloniality, and cis-heteronormativity. This work starts from more deeply intersectional critical race theorizations and from the enduring lessons taught by historically oppressed groups and their creative liberation politics: That making new worlds requires life-sustaining imaginaries and intentional ruptures of an oppressive status quo. I trace how emergent theory and grounded knowledge politics in critical GIS are building with longstanding liberation work by oppressed communities, to create digital spatial politics that code for other possibilities of life, survival and thriving.

Keywords

Digital geographies, critical GIS, thriving, extraordinary politics, liberation

Introduction

Two decades ago, Nadine Schuurman's (2000) "Trouble in the Heartland" framed the trajectory of critical GIS through three waves of intellectual-political-digital encounter. A first wave of fierce criticism and defense of GIS soon moved toward articulating a research agenda on the social implications of GIS. A second wave brought deeper collaborative theorizing of epistemological possibilities, political economic relations and societal implications of GIS and other spatial technologies. Schuurman diagnosed

a third wave seeking to deploy GIS in emancipatory politics and to expand the epistemological and representational possibilities of GIS – moves that coalesced further as feminist, qualitative and participatory GIS (also Pavlovskaya, 2018).

The papers in this collection signal a vitally important fourth wave of critical GIS. Commensurate with prior work, this fourth generation critical GIS takes shape at the crossroads of theory and praxis. It stands out for its intersectional theorizations of digital spatial technologies; deepening engagements with Black, Latinx, Indigenous, feminist, and queer theory; and renewed commitment to learning from digital spatial politics imagined and created by communities struggling against racialized and gendered violence and dispossession, homo/transphobia, and myriad precarities they produce.

I frame these modes of thought and action as a 'fourth generation critical GIS' not to stake a claim to some singular 'newness' or distinct break, but rather to point to commensurabilities with prior lines of thought-action *and* to insist that there is also something new afoot! The work on which I focus here, in keeping with prior lines in critical GIS, analyzes the constitution of power-identity-material relations through multiple registers of GIS and related ecosystems of digital spatial practice (maps and other geovisual representations; data, databases, and data ontologies; algorithms, analysis techniques and other modes of knowing making; political economic arrangements), and attends to more-than-GIS digitalities now in play (locative apps and devices, geosocial networking, geolocated and geovisual web content/services, etc.). This work is epistemologically and politically consistent with prior waves of theory and praxis from qualitative and feminist GIS, their engagement with feminist relationality (particularly relational, sociospatial ontologies and epistemologies), and their enrollment in antiracist, anticapitalist, and anti-cis-heteropatriarchy interventions of many kinds (Pavlovskaya, 2018). But further – and importantly – the work I situate as 'fourth generation critical GIS' here draws together vital theoretical and political interventions to open urgent pathways for further thought and action. Specifically, this work more deeply and explicitly engages theory and politics from Black, Latinx, Indigenous, queer and trans geographies, lifeways, and activisms than critical GIS and digital geographies thought and praxis have yet done.[1] Colleagues inside and beyond academic geography are theorizing GIS and digital geographies through politics that explicitly confront racial capitalism, settler colonialism, and cis-heteropatriarchy and apprehend digital-social-spatial power lines in ways that exceed the ontological-political limits of the white Marxist political economy, white feminist science studies, and Foucauldian poststructural theory that have long dominated critical GIS.[2]

This fourth generation critical GIS takes shape amidst ethical and political crises in which digitality, spatial data and spatial technologies are deeply implicated. Intense forms of algorithmic injustice capture, control, and destroy, constituting unprecedented forms of digitally-mediated oppression and harm. Crowdsourced citizen reporting maps and apps, enable banishment of unsheltered people from downtowns (Hawkins, 2018). Electronic monitoring and the use of predictive 'risk' modeling in determinations of bail, parole and policing function as algorithmic forms of racial control that Michelle Alexander names as the new Jim Crow (2018; also Benjamin, 2019; Jefferson, 2020). A

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[1] Many of you will notice that I do not speak to the workings of ableism as a structural oppression or engage disability justice politics. Feminist crip technoscience is developing vital insight for theorizing digital-social-spatial relationalities forged through disability justice politics (Hamraie and Fritsch, 2019), but I have a great deal more to learn from this work.

[2] This essay shares epistemological and political common ground with my recent call for theorizing digital geographies at the intersection of feminist relationality and Black, queer and feminist code studies, as a way to apprehend 'glitch politics' that refuse normative digital-social-spatial relations (Elwood, 2021). Here my emphasis is on learning from a range of already-existing glitch politics enacted through grounded digital spatial and geovisual praxes, to trace how they 'work' in the world through particular digital and representational moves, and to more explicitly argue how they transform some of the enduring limits of 'critical GIS' as it is has been theorized so far.

resurgence of authoritarian rule around the world works in lockstep with the epistemological crisis of 'fake news' and digitally-mediated violence that amplifies white supremacy, homophobia, transphobia, and more. Yet in the face of these interlocking oppressions, longstanding traditions of thought and action from Black radicalism, Indigenous futurism, queer theory, trans of color critique, postcolonial and critical race feminism teach us that the work of looking for, supporting, and theorizing practices of life, survival, and thriving is urgent (Muñoz, 1999; Sandoval, 1999; Kelley, 2002; Tuck, 2009; Crawley, 2016; Young, 2016; Gilmore, 2017; Lewis et al., 2020, McKittrick, 2021).

The papers in this collection respond to this call through desire-centered research (Tuck, 2009) that seeks to understand and amplify justice-seeking, life-affirming politics that imagine and realize sociospatial relations of thriving. In Baltimore, intergenerational coalitions of environmental justice activists integrate online mapping, spatial data analysis, art, spoken word and popular education to envision utopian urban futures (Fabrikant and Thomas, 2019). Their arguments have produced policy outcomes widely thought impossible, such as the Baltimore City Council's 2018 passage of a speculative tax on excessive real estate transfers that redirects revenues toward permanently affordable housing (Casiano and Shcheglovitova, 2019). Queer digital mapping projects encode sociospatial histories of queer people living and loving, even as the partiality of these data bespeak other lives lost and excluded (Gieseking, 2019). In San Francisco, Los Angeles, and New York, the Anti-Eviction Mapping Project builds multimedia data, interactive digital tools, maps, and info visualizations that expose structural connections between technocapitalism and racialized dispossession, while also creating cartographies that support other possible worlds – like a world with universalized rent control (McElroy, 2022).

These projects illustrate the transformative potential of a fourth generation critical GIS praxis that takes seriously a foundational lesson from generations of struggle by oppressed groups, especially Black and queer communities: ***Forging more just futures requires extraordinary politics.*** When the ordinary is predicated upon fundamentally racist, settler colonial, or cis-heteronormative concepts, relations and practices, extraordinary politics are called for: ***Forms of thought and action that exceed the limits and legibilities of existing theory, institutional practice, and accepted political repertoires*** (Kelley, 2002; Ellis, 2011; Cacho, 2012; Crawley, 2016; Young, 2016; Gilmore, 2017; Moreton-Robinson, 2020). This conceptualization of extraordinary politics draws from notions of the 'otherwise' through which Black, Indigenous, Latinx and queer studies scholars have theorized forms of life, thought and action that thrive in the face of racialized and trans/homophobic violence and exclusion and create other worlds and relations.

My use of 'extraordinary' here arises from the queer liberation theologies-politics of Extraordinary Lutheran Ministries, a movement that was openly ordaining LGBTQ people as clergy from the 1990s through the 2000s, in contravention of their denominational law at the time (Ellis, 2011). As ELM anticipated, their authority for these ordinations was swiftly challenged. Their response enacted the intertwining of grounded struggle and prophetic imagination that animates multiple strands of Christian liberation theologies-politics (West, 2015).[3] Participating individuals and congregations associated with ELM continued, in the face of significant harms, to openly train, ordain and call LGBTQ people into ministerial roles, repeatedly insisting that they were, "borrowing on the authority of the future" (Czarnik-Neimeyer, personal communication, 2018). Within a particular struggle, this movement illustrates

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[3] My turn to queer liberation theologies as a theoretical-political frame learns from McCutcheon's (2021) use of Black liberation theology to theorize Black agrarian movements and the sociospatial relations of present and future liberations they create, and from other geographers who have argued that the unwillingness of much critical geography to engage questions of spirituality in relation to space and politics reflects a normative whiteness of theory *and* distinctly limits what and how we can know social justice in the making (Pulido, 1998).

multiple valences of extraordinary politics: Challenges to oppressive structures that create forms of life, identity and relation that were not just institutionally impossible, but *ontologically* impossible – wholly unimaginable from within the limits of already-existing (racist, settler colonial, homo and transphobic) worlds. Extraordinary politics act simultaneously upon material worlds *and* terrains of thought, often in 'local', 'small' and everyday life arenas, with collective belief that such interventions can and do transform broader systems and relations of oppression (brown, 2017).

Importantly, a theoretical and empirical commitment to extraordinary politics does not mean eschewing attention to the ways in which these transformative politics have wider reach. But it does imply a refusal to respond to extraordinary politics by asking, "Does it scale? Is it transformative beyond the local?" Relentlessly reiterated in critical social science encounters, these questions immediately decenter learning deeply from the workings of extraordinary politics on their own terms, and re-center epistemologies of abstraction and accumulation against which theory and thrivings by historically oppressed peoples are prefigured as insufficient. Hunt (2014), Daigle and Ramírez (2019) and many others have traced the foundational severing of relations upon which these epistemological moves rely, and call instead for theorizing in accountable relations with Indigenous, antiracist, queer and feminist politics. Accounting for the 'wider reach' of extraordinary politics does not rely on abstracting outward across places and times, but rather involves a sustained learning in mutual relations about the insights, incommensurabilities and potential appropriations that arise in theorizing across differently emplaced liberation struggles. Such an orientation is profound shift in the usual theoretical politics of critical social science.

From these origins, this essay outlines some trajectories for an extraordinary politics of critical GIS arising from exciting work already underway, pointing to a coalescing of intellectual-political creativities within critical GIS that charts urgent possibilities and futures. Some readers may wish for deeper genealogical referencing of prior work. Yet while re-telling a history of critical GIS that centers the subfield in (white) Marxist feminism, poststructural theory and feminist science studies is a familiar and comfortable terrain for many us, it re-iterates the silences and hierarchies of prior thoughtlines within critical GIS as it has largely been known thus far. To be clear, I include much of my own prior work in this critique. The genealogies of thought referenced in this essay are intended to chart vital theoretical-political orientations within critical GIS, prioritizing writing by early career scholars and work that centers Black and Chicanx feminism, queer of color critique, and Indigenous relational ontologies-methodologies. To maximize the pathways you can travel via the references, I have included only one piece by each person, as an entry to their larger bodies of work.[4]

An Extraordinary Politics of Theory

An extraordinary politics of critical GIS scholarship requires fundamental transformations in theorizing. Most importantly, this work involves un-doing the prevailing whiteness of our theory. Until quite recently, critical GIS theorizations of knowledge, politics and the social have circulated and re-circulated concepts from a few white male European thinkers – a familiar circuit of Foucault, Marx, Derrida, Latour, Habermas and others. Feminist critiques of science and technology are foundational and enduring in critical GIS, but here again, the go-to concepts come from white feminist histories and philosophies of science – a familiar circuit of Haraway, Harding, Longino, Fox Keller and others.

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[4] For those who wish to trace contours of earlier writing that named critical, qualitative and feminist GIS, a number of edited journal collections from the mid-1990s onward may be useful. See for example *The Professional Geographer* 47(4), *Cartography and Geographic Information Systems* 22(1), *Gender, Place and Culture* 9(2), *Cartographica* 40(1), *Environment and Planning A* 38(11), *The Professional Geographer* 61(4), and *The Canadian Geographer* 59(1) and 62(1).

Rewriting critical GIS theory through concepts from Black feminist and postcolonial science studies, queer and Black code studies, Indigenous futurism and related arenas offers pathways for apprehending how digital-social-spatial relations are calibrated through white supremacy, anti-Black racisms, and cis-heteronormativities. For instance, Shaka McGlotten (2016) uses queer of color critique to draw out a paradoxical relation of digital data, in which Black people are often invisible yet hyper-visible. He traces database and bodily relations of capture/control and valuation/devaluation that interpolate Black lives through white supremacy. Theorizations that arise from the lives of racialized and dispossessed peoples and from queer and trans life illuminate myriad ways that digital mediation produces adverse incorporation, capture, and hypervisibility of bodies, data traces, selves (Benjamin 2010; Jefferson 2020).

Importantly, these analyses are also epistemologically open to seeing how, against all odds, illegible subjects deploy digitality toward thriving and re-inventing. Legacy Russell (2020), Camille Turner (2012), micha cárdenas (2022), Lou Cornum (2015), Jason Edward Lewis, Noelani Arista, Archer Pechawis, and Suzanne Kite (2020), Jodi Byrd (2014), and others theorize digital-social-spatial relations, for example, through the speculative epistemologies of Afrofuturism, Indigenous relational ontologies and epistemologies, and trans of color critique, in ways the open up possibilities for remaking digital spatial technologies and their relations to lands and lives. In different ways, these interventions all re-route theorizations of the digital-social-spatial through concepts originating in Black geographies, abolition geographies, and other desire centered frameworks that affirm life, place making and survivance imaginaries that exceed the limits of structural oppressions set in motion through racial capitalism, settler colonialism, and cis-heteropatriarchy (Tuck, 2009; Gilmore, 2017; McKittrick, 2021).

An extraordinary politics of theory in critical GIS must at base reject dominant liberal theorizations of poverty. Critical GIS praxis has long put digital spatial data and technologies to work in anti-poverty struggles – an urgent move, but one that has also made the theoretical limits of liberal poverty studies ever present. Poverty research and policy is utterly obsessed with measurement, encoding/capturing through data, and mapping that serves instrumental spatial politics like 'deconcentrating poverty' or the supposed 'uplift' potential of mixed income housing (Roy and Crane, 2015; Lawson and Elwood, 2018; Shelton, 2022). Critical GIS has much to learn from politics that reject these claims. Consider the arguments laid out in a self-identified 'radical atlas' produced by Washington DC community organization ONE-DC (2015). Their maps call out the racism that undergirds concepts like 'concentrated poverty', and trace serial displacements of communities of color enabled by policy interventions based on these concepts. They show how research and policy focused on engineering the 'right social mix' for a thriving neighborhood obscures the structural roots of inequality in racial capitalism, and illustrate connections between racialized gentrification and the dispossession of Indigenous peoples. By contrast, their atlas envisions sociospatial thriving, visualizing Black communities' spatial politics of 'staying put' and the crucial relations of wellbeing that staying put enables. ONE-DC does critical GIS in ways that rewrite conventional poverty theory by refusing concepts oriented around (always racialized) assumptions of personal and community deficit, and by reading for other possibilities, such as their argument that dense public housing projects *save* lives. The Anti-Eviction Mapping Project's (2022) atlas, *Counterpoints*, is a closely related recent project, weaving together maps, art, story, infographics, and poetry, in ways that refuse 'poverty' and its entanglements with racial violence and settler colonial dispossession through data, maps, and algorithmic ways of knowing (see also McElroy in this issue). Doing critical GIS in support of such anti-oppression work requires much more than just shifting our techniques of mapping or who maps or what data we use. It requires disrupting dominant claims about impoverishment that academic thinkers have built over decades.

Closely related, an extraordinary politics of theory also calls for critical attention to the politics of "the new", which are deeply imbricated the structural and epistemological violences that contemporary GIS praxis confronts. Claims to innovation, novelty, and newness are intrinsic to the political economic logics of technocapitalism, which has joined with gentrification-oriented urban development policies to catalyze massive racialized dispossession around the world (Mascapac, 2019; Safransky, 2019). Claims about newness are a politics that directs attention away from digitally-mediated dispossession and algorithmic violence. For instance, the widespread precarity produced by the so-called sharing economy, tech start-ups, and platform capitalism is rendered acceptable by scripting these arrangements as 'new', and associating them with progress, modernity, and a supposedly universal 'common good' (Leszczynski, 2014; Datta, 2018). Close attention to deployments of 'new' as a tool of depoliticization is crucial for those of us who do critical GIS in connection with universities. Universities trumpet their supposed community collaborations as sites of crucial urban 'innovation', while directing attention away from the racialized displacement resulting from their capital projects (Baldwin and Crane, 2020). Theoretical claims to newness also reproduce histories of racialized and gendered erasure. For example, it is only possible to theorize crowd-funding platforms as 'new' by ignoring the mutual support networks that have been a crucial survival strategy for BIPOC and queer communities for generations (Melton, 2016). For all these reasons, doing critical GIS in the current moment requires a politics of theory deeply critical of 'the new'.

An Extraordinary Knowledge Politics

Critical GIS has long been a world of creative praxis whose data, digitalities and spatialities overspill "GIS" as such, and extend beyond the academy, into the messy, creative, inspiring efforts of activists deploying digital spatial data and technologies in anti-oppression work around the world. Scholars and activists have long been attentive to the 'knowledge politics' that arise through spatial data, (carto)visual representation, mobile/interactive digital affordances, and geosocial network connectivities, and how they might be deployed to confront and dismantle structures of oppression. Fourth generation critical GIS, more deeply and broadly than ever before, advances an extraordinary knowledge politics that explicitly centers critical race scholars' arguments that the interpolation of human life into 'data' is a foundational technique of racial oppression, enabling racialized capture, control, dispossession and ultimately, the reproduction of white supremacy (Carter, 2009; Reddy, 2018; McKittrick, 2021). Much contemporary critical GIS praxis seeks to build ways of 'doing data' otherwise, whether by revealing how 'data' are made to operate as techniques of racial violence or by enacting social and spatial relations of data-making that en/code for life and thriving. Importantly, 'doing data otherwise' requires not just transforming the data themselves, but also the experiential, epistemological and sociospatial relations of data making, as Mahmoudi, Hawn, Henry, Perkins, Cooper and Wilson (2022) argue in this collection.

A number of ongoing initiatives, for example, call out the ways that white supremacist bordering and settler colonialism operate through (non-innocent) failures to encode some phenomena as data. Interactive mapping platform Torn Apart/Separados reveals the U.S. government's failure to enumerate how many children have been separated from their parents by racist bordering practices (Gil, 2019). Cruz (2019) illustrates racist data politics that produce omission through intimidation, such as the Trump administration's effort to add a question about citizenship to the US Census – a move to undercount communities targeted by an aggressive deportation regime. Extraordinary knowledge politics generate the data that unmask these lies of omission. For instance, Mapping Police Violence is a research collaborative that collects, integrates, expands and shares data on police shootings and deaths in police custody. The interactive maps, infographics and downloadable data sets (MappingPoliceViolence.org) are intended to call out the non-existence of integrated, complete data sets on police violence *and* intervene into this omission through data, maps, and data visualizations. Closely related, the Anti-

Eviction Mapping Project underscores the importance of critical reflexivity upon the logics and relations of spatial data integration projects. They critique the transactional and extractive logics that characterized an effort to build a comprehensive national eviction database, showing how data initiatives assembled through these relations inevitably (if unwittingly) support the poverty research industry and racial capitalist accumulation (Aiello et al., 2018).

An extraordinary knowledge politics of critical GIS aims to create data, attribute schemes and care-full collective relations of making data that respond to racialized, gendered and settler colonial lacunae in complex and nuanced ways. The Missing and Murdered Indigenous Women (MMIW) database exemplifies these knowledge politics, collaborating with communities to integrate, expand, and rework data sets on cases of violence against Indigenous women, girls and two spirit people (Lucchesi, 2022). MMIW seeks not just to recover and compile disappearances and deaths which racist and settler colonial institutions have refused to count (though this is vital), but to build a database capable of knowing what settler colonialism renders systematically unknowable. MMIW's spatial data records geographies that "span beyond colonial borders." It encodes attributes that are absent from police reports and similar data, yet are crucial to documenting Indigenous lives, identities and enduring effects of settler colonialism (e.g. full names and translations, institutional contexts in which a case is situated – such as foster care or residential school). MMIW explicitly frames these data praxes as ongoing collective acts of *caring for information*, and therefore, caring for lives and relations that data represent.[5]

In another example of critical GIS praxes that 'do data' otherwise, the Morris Justice Project in south Bronx demonstrates possibilities for data-making as embodied relational place making (Stoudt and Hassan, 2019). In a neighborhood where pervasive police violence causes many residents, especially people of color, to self-limit their movements in public space, MJP engages community members in a 'public science' of gathering and analyzing experiential data on aggressive policing, a process in which residents collectively re-emplace themselves in the neighborhood. MJP shares back these data with careful attention to how data making/sharing revives forms of sociospatial power/knowledge that aggressive policing destroys: The data visualizations in their distilled 'back pocket report' literally move through the neighborhood in people's pockets; they print their data on t-shirts and buttons; they chalk it on sidewalks. Such strategies are familiar within longstanding repertoires of critical GIS in anti-oppression activisms. But in the present moment, the insistence of MJP and others upon 'doing data' in ways that build accountable relations to people and place stands out as an extraordinary knowledge politics that offers other possibilities to settler colonial and racial capitalist data regimes.

Fourth generation critical GIS praxis teaches us the importance of collective against-the-grain interventions aimed at transforming the (often violent) experiential relations of spatial data making in contemporary digital environments. Critical GIS praxes have long revealed what oppressors wish to hide, spoken truths to power, and been met with backlash. Yet the platforming and social mediatization of the environments in which sociospatial data are made, shared and visualized has opened new affordances for these harms. Countless coordinated viral attacks on BIPOC people, women, trans and queer people show these harms are not experienced equally by all. QueeringtheMap.com's crowdsourced map interface was hacked immediately after its release, filled with auto-generated hostile messaging (Sharpe, 2018; Whitaker and Grollman, 2019). The group's responses to this viral attack suggest important directions for carefully-considered collective tactics in the face of such risks and harms. A coalition of coders and non-profit digital justice groups came together to evaluate the digital-social-spatial exposures of

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[5] Relatedly, the interlocutors in Swab and Gieseking (2022) point to the significance of accountable reflexive processes of data-making around queer geohistories as a necessary practice of caring for LGBTQ+ communities in the face of historic and ongoing homo/transphobic erasure, violence and removal.

QueeringtheMap.com's interface and content, and generate practices that would allow it to survive. Among other changes, contributed content is now reviewed by a moderator panel that evaluates the geographically contingent, language dependent forms that hate speech takes, and moderates postings that may unwittingly expose the posting individual to harm. In sharp contrast to the technocapitalist belief that hate speech can be algorithmically controlled (Matsakis, 2018), this case underscores the continued significance in critical GIS praxis of experiential, situated knowledge about data politics and their grounded consequences.

Further inspirations for an extraordinary knowledge politics in critical GIS praxis can be found in digital activisms that center arts and performance, because these arenas operate at the vibrant interface of what is and what *might be*, grappling with the limits of the here and now, while also charting possibilities beyond it. Seattle conceptual artist Natasha Marin's website (Reparations.me) was an online exchange platform that called on white people to give time, possessions, and money in response to requests shared by BIPOC people. Simple in principle, Reparations.me is a complex intervention. It leverages white privilege, says what liberal postracial politics in the U.S. refuse to say regarding the consequences of white supremacy and enslavement are everywhere manifest, including in racialized precarity and ill health, and does what these liberal politics insist cannot be done in the form of reparations.

When the site launched, hateful content poured in. Harassment and death threats went viral on social media. Marin used Twitter to mobilize a group of 'Troll Slayers' to help compile the words of racist commentators on her site, and to pledge donations of $1 per racist comment, with funds directed to needs shared on the platform (Bernard, 2016). Through these tactics, Marin reassembled viral hate speech into a public archive that ruptures white liberal mis-imaginaries about a post-racial America. Through ridicule, sarcasm, and a deft re-purposing of the viral potentialities of social media, she harnessed an outburst of racist cyberharassment to amplify her original goals and politics. These extraordinary knowledge politics are steeped in the powerful affective politics of re-appropriation and re-signification that have been central to the survival and thriving of communities of color and queer communities for generations (Nyongo, 2009; Rault, 2017). As Shelton (2022), Kelly and Bosse (2022), and Lally (2022) in this collection demonstrate, critical GIS praxis is defined by creative interventions born of heterodox epistemologies. Yet projects like Reparations.me point up the possibilities and urgency of learning from deeper engagements with Black and queer intellectual-cultural-political life and their creative collisions between arts and science, music and measurement, digital and analog (McKittrick, 2021).

Persistent Tensions

Inspired by the authors in this collection, their collaborators, and closely related work by others, I have highlighted the urgency of a fourth generation critical GIS committed to building an extraordinary politics of theory and grounded knowledge politics. "Extraordinary" politics are forms of thought and action that arise from and point to liberation ontologies: conceptions of worlds beyond racial capitalism, settler colonialism, cis-heteronormativity, as interlocking structures and relations that overdetermine white supremacy (Kelley, 2002; Ellis, 2011; Cacho, 2012; Crawley, 2016; Young, 2016; Moreton-Robinson, 2020). Yet critical GIS praxis calibrated for extraordinary politics means also continuing to grapple with several persistent tensions.

First, dismantling the whiteness of theory in critical GIS requires sustained critical attention to questions of appropriation of theory-politics forged by communities of color, and for many of us, ongoing work to discern and disrupt the ways that white epistemological ignorance inflects our analyses, including no doubt my own here (Sullivan and Tuana, 2007). Second, a critical GIS that aims for extraordinary

politics must also attend to the inherent tensions of intersectional struggles for justice, such as incommensurabilities within and between the different claims and actions that point the way toward Black, queer, or Indigenous liberation (Daigle and Ramírez, 2019). The creators of Queering the Map point to an example, noting that their effort to remap queer spaces stands in uncomfortable tension with Indigenous politics around land and liberation, and in this collection, interlocutors in Swab and Gieseking (2022) also point to these dynamics. Many queer spaces are asserted on colonized lands, where particular forms of mapping have long been weaponized as a tool of genocide and dispossession (Sharpe, 2018). A vital agenda for a fourth generation critical GIS lies in ethical mutually accountable efforts to wrestle with such incommensurabilities.

Finally, critical GIS must continue to grapple with the tension inherent to digitality itself. Digital praxes that take flight toward other worlds and politics remain tethered to the ontological limits of digital representation. Digital logics and capitalist logics mirror one another, with strong potentials to amplify and reproduce racial, colonial, and cis-hetero violences (Russell, 2020; Lewis et al., 2020). A politics of withdrawal is insufficient, given that opting out is impossible for communities already adversely incorporated by digital systems of oppression (Eubanks 2018). Staying with the trouble means striving for a position at the edges: engaging liberatory potentials while seeking to confound structures of capture and control. As the papers in this collection wonderfully reveal, critical GIS praxis that operates creatively around this tension is already in view and remaking worlds all around us.

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