A Letter from the Guest Editors

"COUNTER-GIS" AS COLLABORATIVE PRACTICE: GROUNDED EXPERIMENTS IN DIGITAL MAPPING

Over the past several decades, digital maps have increasingly become a part of the lives of non-specialists, be it through quotidian reliance on GPS-enabled mobile maps for navigation, or by the influence of digital platforms with spatially indexed shops and restaurants on our real world choices. With all of this common usage, comes common aesthetics and expectations of a certain map "look." On the development end, with the proliferation of powerful spatial libraries in JavaScript and Python, generating spatial visualizations without traditional GIS is also becoming more and more prevalent. However, even when using web programming and specialized open-source tools, the typical logics of GIS software (usually Esri-flavored, but including QGIS and popular spatial programming libraries) are still pervasive in the way we represent space: Cartesian coordinates, standard projections and basemaps (Wilmott and Wood 2024), and smoothly gliding Web Mercator "experiences" are the norm. What about cartograms? Non-linear distance transformations? Discontinuous spaces? Non-linear distance scales? Mental and perceptual spaces (see Crandall-Oral 2024 on "deep mapping")? Pictorial maps? "Glitchy" or disorienting spatialities (Leszczynski and Elwood 2022)? Who is pushing back against the "slippy map" (digital maps with pan and zoom functionality, a la Google Maps) and its slippery universalism, and with what tools?

In the papers gathered here, we aim to showcase experiments in spatial representation beyond place markers and polygons on maps, from demos of new tools and historical reclamations of pre-GIS representation techniques, to theoretical engagement with the ontology of mapping and representation itself. This special issue first emerged from a series of paper sessions at the 2023 Denver AAG Annual Meeting entitled "Experimental Digital Mapping // Back to the Future," and has since grown to encompass scholarship by additional authors. While situating ourselves as scholars and practitioners within the tradition of Critical GIS (Thatcher et al. 2016, Bergmann and O'Sullivan 2018), this issue is specifically devoted to pushing beyond traditional geographic information systems, toward, in the words of Bergmann and Lally (2021), "geographical *imagination* systems" (emphasis added).

As pointed out by Dalton and Thatcher (2019) in their introduction to **a previous special issue** of *Cartographic Perspectives*, some of the critical aspects of the study of geovisualization resided for a long time within an orthodox variant of critical cartography, a field that itself has evolved to engage the practice of mapping as much as its interpretation. We place ourselves within the interlocking canon of Critical GIS in part because of our explicit interest in tools-making—and tools-breaking—as a means of analysis and theoretical intervention. By invoking "Counter-GIS" we are flagging our intent to not only think through new

ways of visualizing space, but also reclaim visual vernaculars that have fallen by the wayside (Bunge 1962, Forer 1978, Hägerstrand 1957).

In "Mapping Up," Eric Robsky Huntley and Asya Aizman open their piece reflecting on early surficial representational experiments from Harvard's Center for Geographic Analysis. "Mapping up," in their view, is an extension of anthropologists' interest in "studying up" and aiming disciplinary tools at the powerful, as applied in larger projects of feminist data science (D'Ignazio and Klein 2020, Kelly and Bosse 2022). They argue for an epistemological register that studies not just the *effects* of exploitation, but the exploiters themselves, in service of instigating systemic change. In addition to discussing mapping projects related to housing rights and Indigenous land theft, they return to Howard Fisher's surfaces by producing their own engine of surface creation. The `unknownpleasur` package, named for the iconic vector cover art of Joy Division's 1979 album *Unknown Pleasures*, link renter and landlord, precarity and enclosure, into the same surface. Mapping up, they say, is "able to accommodate a range of practitioners united by no shared program except the urgency that comes from a world on fire."

In our own piece, we discuss the Relational Reprojection Platform (RRP), an interactive tool we built to create custom azimuthal reprojections of spatial data with non-linear distance transformations (see also Payne and McGlynn 2024). Building on mid-twentieth-century efforts by Torsten Hägerstrand, Waldo Tobler, and William Bunge, as well as more recent digital experiments (Lally 2022), we show the myriad ways in which this kind of counter-GIS tool can enable new kinds of cartographic thinking. We conclude with a rallying cry for more experimental tools to challenge our established notions of visual spatial vernacular, while still remaining committed to rigorous, reproducible data analysis.

The Practical Cartographer's Corner for this issue happily illustrates some of the same values we hope to gird to "Counter-GIS." David O'Sullivan and Luke Bergmann present *MapWeaver,* a web application that they built to better visualize multi-dimensional data. By taking the tile and the basket weave as both physical and mathematical analogies to their visualization problem, O'Sullivan and Bergmann describe a sophisticated tool that creates an unfamiliar—though immediately intuitive—new visual vernacular for complex landscapes. They go into great detail about visual effects that make the resulting maps not merely more pleasurable to look at, but easier to understand. The authors' attention to scaling and skewing, for example, is a telling reminder that worlds of possibility are opened by pushing tools beyond the most programmatically efficient defaults.

While O'Sullivan and Bergmann employ a textile-inspired method to weave digital maps, Theresa Quill and Leanne Nay's contribution to cartographic pedagogy, "Maker Maps," explores the physicalization of maps as learning tools. What is it to illuminate, to embroider, to wear spatial data, and what do those modes of interaction give to students? At first this may seem to have little to do with *digital* mapping, but Quill and Nay's approaches seek to introduce students to GIS concepts in analogue and hybrid forms (like paper circuit maps with embedded LED stickers), hands-on approaches that, in their words, "help novice students approach new concepts without the burden of also learning a new software." In an approach guided by embodied experience, curiosity, iteration, and collaboration, their students learn not just how to map, but how to "identify and define problems, select appropriate tools and materials, develop prototypes, and critically reflect on their work."

An entirely different way of stepping outside the conventions of mapping is to transcend the limits of conventional consciousness itself. In a Visual Fields contribution entitled "The Map Making Game," Mark Denil proposes a psychedelic toolset to step out of the game of cartography and challenge communication norms in a way that would normally be dismissed as "misreading." Denil employs the grisly example of the My Lai massacre to illustrate how one could construe all communication as a button-pushing "game," one with real and tragic results. If all communication—including visual communication like cartography—is a game, it implies that there are agreed-upon rules and norms, some of which might be limiting our perspectives or even underwriting harms. One possible balm to this, Denil argues, is to step out of that very game, "to observe it from outside its self-defined infrastructure of technique and virtuosity; to examine mapicity from a high ground not otherwise accessible." Quoting extensively from Timothy Leary, Denil suggests radical chemical methods for doing so.

The articles collected in this special issue represent a number of possible responses and paths forward for grounded forms of experimental digital cartography, but the point of drawing this work together is as much about showcasing variegation and freedom as establishing any kind of "counter-GIS canon." We see broader themes that tie these pieces together, especially around the importance of understanding mapping as a collaborative process, one that can involve different relationships between data points, data producers, map makers, and map readers. Sometimes this takes the shape of pedagogical techniques to render complex geographic concepts tangible to students (as Quill and Nay demonstrate), other times it is made manifest in relatively circumscribed digital mapping applications with big theoretical interventions behind them (`unknownpleasur` in Huntley and Aizman's intervention, *MapWeaver* for O'Sullivan and Bergmann, and the Relational Reprojection Platform in our own piece). Finally, for Denil these relationships should be destroyed to better understand them, by stepping out of the "cartographic game" entirely.

There is some irony in trying to lower entry barriers to mapping by making increasingly sophisticated technical tools, however narrow in scope. Nevertheless, this *making* is part of an important ongoing discussion that we are engaged in as both theorists and practitioners. The stated reasons behind Huntley and Aizman's versus Denil's respective interventions are different, for example, but putting them in the same issue inspires us to take up Huntley and Aizman's urgency in a "world on fire" with Denil's call to be skeptical of the very concept of hegemonic systems by critical "strange-making." We hope that curious readers can take up these tools and build on these ideas in their own areas of interest, and continue to push cartographic boundaries.

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