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From Representation to Conversation:

Mapping in Practice

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Abstract

This essay explores how maps perform, not in theory or in principle, but when used in practice. It analyzes the dangers and opportunities of using maps for community engagement, as experienced by practicing planners, landscape architects, and educators. Interviews with these professionals about their experiences in the field reveal commonly-held assumptions about the accuracy of maps, the technical expertise required for mapping, and the resulting influences upon non-experts' willingness to provide feedback, to participate collaboratively, and to feel ownership over the mapping process. We learn from these practice stories that maps can be dangerous: they can mislead, they can intimidate, and they can prevent collaboration. But we learn, too, that maps can also provide powerful opportunities for stimulating inquiry, for facilitating conversation, and for producing shared visions. The professionals interviewed for this essay explain how they avoid the dangers of mapping and instead capitalize on its opportunities by reframing maps – not as static representations – but as dynamic, conversational tools for learning, negotiating, and visualizing.

Introduction

From the navigation systems in our cars to the route map at the bus stop to the weather forecast on television, maps are everywhere – and that is part of the problem. We have become desensitized to maps. As everyday objects, maps are "intensely familiar" to us – we take for granted our ability to understand them and their ability to represent accurately. Now naturalized and mollified, the map represents absolute accuracy, and we easily accept what it depicts; the map is understood simply as a "neutral, informative transfer of external information" (Cosgrove, 1999, p. 2).

The ubiquitous use of maps in daily life, however, "can obscure the epistemological and interpretive challenges that mapping presents." As Denis Cosgrove (1999) reminds us, maps are also troubling:

> *[Maps'] apparent stability and their aesthetics of closure and finality dissolve with but a little reflection into recognition of their partiality and provisionality, their embodiment of intention, their imaginative and creative capacities, their mythical qualities, their appeal to reverie, their ability to record and stimulate anxiety, their silences, and their powers of deception.* (p. 2)

The Map in Theory

Cartographers, planners, and scholars have long been wary of the complexity, ambiguity, and agency inherent in producing maps. Cosgrove (1999) and other academics, in their anthology of mapping, explore how maps have exerted and subverted power throughout time. In one of the anthology's essays, James Corner (1999) problematizes the power granted to maps due to their assumed accuracy. He finds that "maps are highly artificial and fallible

constructions…that possess great force in terms of how people see and act" (Corner, 1999, p. 216). J.B. Harley (1988a) also finds maps to be "a language of power" – one mediated through the "geometries and representational hierarchies" of mapping (p. 303). Harley (1988b) expands on these claims in "Silences and Secrecy: The Hidden Agenda of Cartography in Early Modern Europe" where he finds power in deliberate acts of censorship and in the omissions associated with applying classification schemes to real-world complexity. He regards maps not as "objective" or "value free" but rather as rhetoric, their meaning impacted by the values of the map maker (p. 71). In "Deconstructing the Map," Harley (1989) challenges the conventional assumption of the map as a "mirror of nature," encouraging people to deconstruct the map in order to discover its underlying meanings (p. 4).

Cosgrove, Corner, and Harley help us understand maps theoretically. They deal not with mapping as a "practical form of applied knowledge," but as an abstracted form of representation, suitable more for scrutiny and criticism (Perkins, 2003, p. 341). Such literature explores the process of mapping and problematizes the maps that are produced from this process, but it does little to address how these maps perform when actually used.

The Map in Practice

Maps, if nothing else, are performative objects; they are meant to be used, experienced, and understood. While theory is concerned with how the map *became* and what the map *is*, practice is concerned with how the map *interacts*; the map is seen, not as a flat surface for dissection and reflection, but rather as a dynamic canvas for learning, exploring, negotiating, and visualizing. As such, we must explore maps in practice just as we explore maps more abstractly.

Maps are often used in practical applications in the field of planning. Spread across a table, a map acts as a liaison between the planner and the community members, providing a shared surface on which the planner can convey information and the community members can respond with their own input and experiences. However, the dubious yet pervasive notion that "ordinary people cannot read plans and maps" often beleaguers the field, leaving planners to question whether the layman can understand what the map depicts and whether he feels comfortable enough to critique it (Rowe, 2015, p. 17). It follows that a map's effectiveness as both a vehicle for communication and as a repository for feedback is an important measure of its performance.

The Practice Stories

So that we can better understand how maps perform, this essay analyzes practice stories – experiences of map-making professionals from the field as recounted by these practitioners in their own words. The analysis of these practical and professionally-applied experiences provides insight into the use of maps on the ground, as opposed to strictly in principle. The professionals interviewed for this essay vary in their backgrounds and specialties; they include planners, landscape architects, and educators – all of whose stories are stimulating and informative.

Jeff Chusid, George Frantz, and Jennifer Minner are all professors in Cornell University's Department of City and Regional Planning. They share their experiences of working with a variety of communities from Austin, Texas to New York, New York and detail what they learned about using maps for community engagement. Chusid (interview with author, November 13, 2017) tackles the barriers to entry inherent in understanding and producing maps while Frantz (interview with author, November 13, 2017) focuses largely on the importance of encouraging

and making meaningful use of community feedback in the mapping process. Minner (interview with author, October 23, 2017) explores the power of maps to foster common ground and build consensus among those with differing interests. Additional insight also comes from practicing landscape architects Jorgen Primdahl and James Richards, who were interviewed in related research (Filipau, 2014).

The Lessons

Collectively, these professionals' practice stories create a rich tapestry of experiences from which to examine the dangers and opportunities of using maps for community planning. Grounded by the practical and applied settings of these stories, this essay and its lessons are intended to inform and guide other planners' mapping practices.

This essay, however, does not attempt to issue a prescriptive set of rules for mapmaking because, in the face of myriad contexts, "general principles that might govern design or explain use would be doomed to fail." To standardize maps in this way would simply validate "artificially theorized models," giving the map a form that ignores the complexity and uniqueness of the historically-specific information that it attempts to display (Kitchin, Perkins, & Dodge, 2009, p. 3).

Nevertheless, as Cosgrove (1999) argues, "much is at stake in matters of space and its formal, graphic representation" (p. 4). Political boundaries and even the futures of communities depend on maps as vehicles for spatial determination. The real and considerable effects of applied mapping show how significant it can be to rethink planners' typical approach to using maps for community engagement. Indeed, as Corner (1999) warns:

> *Planners consider mapping a rather unimaginative, analytical practice. An unfortunate consequence of these attitudes is that the various techniques and procedures of mapping have not been subject of inquiry, research, or criticism. Instead, they have become codified, naturalized, and taken for granted as institutional conventions.* (p. 216)

Mapping requires – as this essay attempts to demonstrate – careful consideration into the prevailing popular assumptions about the authority and infallibility of maps and the ways these perceptions shape map viewers' willingness and ability to provide feedback, to participate collaboratively, and to feel ownership over the mapping process.

The Dangers of Mapping

The dangers of mapping are well-documented in theoretical literature. Cosgrove (1999) warns against mapping's "selectivities" (p. 11). He notes that the selection and omission of features on a map, though often hidden behind the pretense of aesthetic improvement, can be intentionally oppressive acts of power. Corner (1999) decries the conventional conception of maps as "largely unquestionable" (p. 221) and encourages mapping as a way not "to assert authority, stability, and control, [but] to search, disclose, and engender new sets of possibility" (p. 225). Harley (1988a) views maps as an "impersonal type of knowledge" that can never truly depict the whole of a place (p. 303). The practice stories that follow will test these theories against reality and will enable us to identify important considerations for practical and applied mapping in future cases.

The Map as Untouchable

Maps, "as expertly produced, measured representations," can sometimes be regarded as finalized and immutable. Map viewers – aware that the map was "constructed from a set of

internal instruments, codes, techniques, and conventions" – assume, not only that the map is accurate, but that it is comprehensive – that it could not be supplemented by additional information or revisions (Corner, 1999, p. 215). The appearance of the map, with its coordinate grid and proportional scale bar, deters would-be attempts at modification by underscoring the scientifically-measured way in which it was created. The map is protected by an aura of sacredness – as British town planner Tony Gibson puts it – as if it had "a big protective dome over it saying, 'Do not touch!'" (Forester, 2008, p. 107).

Yet, maps are also tactile objects; when rolled out on a table, they should be viewed not as impenetrable surfaces, but rather as canvases on which to draw and diagram. Simply declaring that an area needs improved accessibility is not nearly as effective as drawing new crosswalks or suggesting new greenways on a map (Forester, 2008, p. 100). The act of drawing on a map requires people to think differently; they must ask themselves, "Where should we put the greenway? What does it affect? Who are the people we have to involve because the greenway is *here* instead of *there*?" The map, because of its inherent need for detail and specificity, forces people to "deal with the complexity of space" (Pappalardo, interview, October 9, 2015). They must locate, size, and visualize their ideas such that they make physical and relational sense on the map – a process that involves a level of refinement beyond that necessary for simply conceiving of or verbalizing an idea.

Non-professional map viewers, however, are often reluctant to interfere with the map; they see it as "precious" and relegate themselves only to pointing (Rowe, 2015, p. 14). To remove the metaphorical dome that protects the map against critique, map makers are often required to explicitly invite modification. Professor George Frantz has learned through the years that he can do just that by making the first mark himself. Frantz (2017) explains:

> *The map has to be nice enough [in quality], but it also has to be of a quality where people don't hesitate to write on it and mark it up. Sometimes it takes me grabbing a Sharpie and making the first mark on the map, and then everybody realizes, 'Oh, okay, I can do this. It's okay.'*

Frantz, as the map maker, must first draw on the map before viewers feel comfortable doing the same. To convince his viewers that the map is not intended simply to impress, Frantz must intentionally deface that which he so carefully produced. He conceives of his map as part of a conversation, as an "active participant" – and invites his viewers to share this sentiment. To Frantz, the map is "intended to be torn, marked on, and used up" (Forester, 2008, p. 124).

However, sometimes even demoting the map to the status of "draft" is not sufficient to encourage viewers to mark on it; they are not only hesitant to soil the map maker's work, but also fearful of being judged for their drawing abilities. To combat this fear, landscape architect James Richards asks his map viewers to do something small: "Just circle what you said right here on the block that you mean," he says. This intrusion on the sacred map is not particularly offensive, neither to the map maker nor to the person doing the marking, and "once [that person] is okay, two or three people are also okay" (Filipau, 2014, p. 47). In this way, the initial violation of the map's perceived perfection leads, not to ridicule and castigation, but rather to empowered, participatory collaboration.

By encouraging viewers to modify their maps, Frantz and Richards concede ownership to them; the map moves from the sole possession of the map maker to a shared ownership with the newly-appointed map editors. The marked-up map not only depicts where the map viewers live and work, but also now expresses their own ideas; "when people leave their marks on paper, they

feel similarly to what they feel when they feel listened to; ideas somehow become more tangible and real" (Filipau, 2014, p. 48). Allowing these non-professional ideas to coexist on the same plane as a professionally-produced map serves to dignify these ideas, affording them a greater level of respect and empowering their owners to be more inquisitive and analytical. The benefits of such collective editing underscore the importance of perceiving the map not as a "show-piece," but as a "warm, receptive place for ideas" (Frantz 2017; Chusid 2017).

The Map as Antagonistic

The use of maps in community planning is often future oriented; maps are used to reframe "what is" into "what could be," to create a shared vision for the future of a community. This task of "re-shaping the worlds in which people live" can be contentious, especially if the map maker does not live in that world himself (Corner, 1999, p. 213). Maps produced by professional "outsiders" may inspire antagonism, as residents come to ask how the future of their community might be dictated by someone who does not live there. We find such antagonism exemplified by landscape architect Jorgen Primdahl's experience in Denmark, where he and his colleague worked to update the parish of Skive's master plan. He recalls:

> *We did a landscape mapping workshop, where my colleague brought a very technical map that he created. He divided the parish in ten different homogeneous small regions, then he described his vision of each region. I thought that everybody would listen politely, and there would be no debate. We just thought we would show them the map and move on. However, there was a tremendous debate.* (Filipau, 2014, p. 25)

The way in which Primdahl's colleague – an outsider – mapped the parish was indeed foreign to the community members: "they did not think about their parish as something that could be

structured or described the way the expert did it" (Filipau, 2014, p. 27). If this so-called expert could not properly map the "what is" as the residents conceived of it, then how could he possibly be trusted to map the "what could be" – to plan the future of the community?

As a result of the discrepancy between the professional's and the residents' conceptions of the parish, residents sought to regain ownership over both the map and the future of their community. They took what they viewed as the map's mistakes as "*mis*-takes," and turned them into opportunities to teach the map maker a more practical "take" on their community (Klemp et al., 2008, p. 6). In small groups, they drove around the parish to verify and adjust the boundaries of Primdahl's colleague's map and then proposed corrections based on their own fieldwork. This exercise allowed the residents to subvert the typical power relation between map maker and map viewer, enabling them to restore and profess authority over their own community.

Primdahl's experience serves as a warning to map makers who map from a distance, removing themselves and their maps from lived experiences. When policies and designs derive from mapping at a distance, they risk being incompatible with conditions on the ground. By fostering a "notion of socially empty space," maps "lessen the burden of conscience about people in the landscape," disconnecting policy and design decisions from their human impact (Harley, 1988a, p. 303). Frantz and his students experienced such an outcome when their scenic resource inventory was rejected by the Town of Esopus. The group, constrained by time, was unable to effectively familiarize itself with the site, resulting in the omission of significant and valuable resources that the Town identified as "scenic." Frantz (2017) explains:

> *The Town officials rejected the scenic resources inventory that the team had created, not because it wasn't well done, but because the students' perception of what a scenic*

> *resource was differed from the Town's perception. The methodology [the students] used missed a number of key scenic resources in the eyes of the Town.*

Frantz's initial inventory map, because it did not identify all the resources that the community members considered scenic, symbolized "the lack of input and dialogue that went into its creation" (Rowe, 2015, p. 13). The map – because its makers did not understand how residents actually felt about their community and its resources – imposed solutions from above that were not derived from conditions on the ground. It presented issues, but mis-represented as well. Allan Jacobs and Donald Appleyard (1987) decry this tendency to "design for places and people we do not know" and they scorn the "rootless" map maker. Indeed, mapping at a distance, though increasingly facilitated by online mapping programs and open source data, provides only the most "superficial conception of place" (p. 222). Frantz (2017) identifies this problem in his own work, explaining:

> *We apparently came across as: 'This is our idea.' The community took it as being too finished in that they really had little say in the ultimate product. [When we present again] we'll make sure that the presentations are: 'These are our ideas. What do you think?'*

Frantz's transition from "This is our idea" to "These are our ideas. What do you think?" is significant – it signals a change from the professional as unquestionable to the professional as questioning, from the resident as student to the resident as teacher, from the map as a prescription to the map as an invitation for input. As Professor Jeff Chusid (2017) puts it, "There's an expectation for feedback, a need for feedback." Richards adopts a similar attitude: "Yes, we are professionals, and we are bringing in objective eyes to this, but you people live

here, you are the real experts – so tell us" (Filipau, 2014, p. 23). It is through this co-production between expert and resident, map maker and map viewer that the map becomes, not prescriptive, but rather "infinitely promising" (Corner, 1999, p. 236).

The Map with Barriers to Entry

Though this dyadic relationship between those who produce the map and those who consume the map may be the ideal, modern mapping programs like Geographic Information Systems (GIS) create barriers to entry for the less-technically articulate. Indeed, "the medium and means of mapping, whether paper or GIS, and the style and mode of facilitation influence who takes part, the nature of outcomes, and power relationships" (Chambers, 2006, p. 1). In so-called participatory GIS mapping, non-experts participate only indirectly, their feedback refracted through the lens of the map maker and the limitations of the GIS software.

As GIS has become more pervasive, Chusid has seen a parallel shift in the extent to which community members can contribute to the mapping exercise as well as how they feel about the finished product. Chusid (2017) tells us:

> *Back in the 70s and 80s, we were freer to use cruder materials because we didn't have the sophisticated modeling software of today. It was great because we weren't afraid to model a lot of things [that you wouldn't normally map]. We would model a breeze or a smell with just a piece of colored construction paper.*
>
> *Nowadays, we use computer generated models that are often very difficult for non-experts to participate in – they can't shape the model in the same way. The model already presupposes a level of expertise, a level of finish, a level of sophistication – as in, 'We know best, not only what you want, but how to get there.'*

Chusid notes that, before the introduction of GIS technologies, participatory mapping was a less divided experience. Community members were just as able to model with construction paper as their expert facilitators. “Cutting and tearing pieces of construction paper, labeling them, and gluing them onto a board,” as Chusid (2017) explains, “was not a tool for experts only.” GIS, however, has made participatory mapping less about participation and more about facilitation; the expert acts as an intermediary between the community and the mapping technology.

This technological intervention, though efficient and accurate, is not as fruitful. For, “even though computer maps are easier to create and manipulate, most important insights come from drawing the maps by hand” (Filipau, 2014, p. 58). Relegating community members to conversation instead of tactile engagement limits their ability to be inquisitive and exploratory: “the parts of the brain responsible for creativity and thought remain underutilized when people only talk” (p. 44).

Participation through speech alone leaves community members somewhat removed from the map at multiple scales; their spoken word must be interpreted by the map maker and then translated into a form that is understandable by the GIS software before being conveyed on the map. By the time an idea actually reaches the map, it is not truly the community member’s anymore, but rather some amalgamation of his, the map maker’s, and the software’s understanding of that idea. Because information must be “translated through the complex semiotic systems of cartographic representation,” participatory GIS – rather than being participatory – reinforces the divide in technical expertise between the map maker and the map viewer and, compared to more traditional mapping processes, may actually make it more difficult for community members to contribute (Cosgrove, 1999, p. 12). This disconnect affects the community members’ perception of ownership of the map, and, as Chusid notes, can lead to

situations in which the map is perceived as prescriptive rather than collaborative – it reflects the ideas of the expert, not those of the community.

These practice stories suggest two critical lessons. First, people's conception of maps as objective and indisputable significantly shapes their perceived ability to question, critique, and modify those maps. Second, people's willingness to participate in the mapping process is limited by their assumptions of differences in expertise between themselves as non-professionals and their expert facilitators. These obstacles to collaboration and community participation signal opportunities to challenge commonly-held convictions about mapping – opportunities for planners to help people reframe how they conceive of maps, of their abilities to influence them, and of the value of their own local knowledge.

The Opportunities of Mapping

Though the theoretical literature is often highly critical of mapping, theorists and scholars do recognize its power and potential. Indeed, Cosgrove (1999) concedes that mapping "is perhaps the most sophisticated form yet devised for recording, generating, and transmitting knowledge" (p. 12) and Corner (1999) lauds the "revelatory and productive potential" (p. 224) of maps. While the theorists offer some praise for mapping, they offer more criticism – but they stop short of proposing solutions to address these criticisms. The existing literature, then, leaves significant room for further inquiry into methods for demystifying the mapping process. The following practice stories illuminate how planners have attempted to address the dangers of mapping in actual community planning cases by offering practical solutions that the theory has yet to identify.

The Map as Modifiable

The previous practice stories demonstrated a prevailing – yet potentially dangerous – commonly-held conviction that maps are "true and objective measures of the world;" they are measured, scientific representations and are therefore considered indisputable (Corner, 1999, p. 215). The techniques, instruments, and conventions involved in the mapping process are assumed to prevent subjectivity or distortion. A north arrow, scale bar, and other remnants of this process attest to the accuracy of the final product and, as a result, "the lines on the map acquire an authority that may be hard to dislodge" (Harley, 1989, p. 13). This assumed accuracy essentially shields the map, protecting it from critique or alteration.

Perceiving the map as infallible discourages residents from sharing their opinions and experiences – it is difficult to correct something that you have been led to believe is scientifically accurate. Indeed, an opinion that subverts the "reality" on the map must be automatically suspect since the map is, by its nature, objective. Rather than acting as a stimulus for conversation, the map stunts it, serving only as an inert record of presumed factuality. Chusid recognizes this danger and addresses it by deliberately undermining the omniscience of the map. Chusid (2017) describes this technique as follows:

> *Your maps have to be based on all the information that you [as a professional] are presumed to know, but you do not necessarily call out all the information in the maps. If it's a map of land use or zoning, you may not mark every building to prove that you know that every one in that area is a warehouse, but you know it in your head. In a way, it's good if community members [point out omissions] because then you can add it to the map right then and there, even though you may actually know that information already.*

This strategy of intentionally omitting or glossing over certain elements of a map may seem like an abuse of the power of maps to mislead, but it is actually an effort to transfer this power back to the viewer. Filling in or correcting information on a map removes the map's guise of infallibility and renders it modifiable. The presence of modifiable omissions enables community members to profess their own knowledge about the community, and to make a visible change on the map that indicates meaningful involvement. As Chusid (2017) says, modifying the map "gives the community a sense that their voice matters" and softens the "authoritarian image" of the map.

When community members can come to see the map, not as a static representation of reality, but rather as a dynamic "conversational drawing," then they are more willing to share their ideas, no longer stymied by the assumed correctness of the map. A conversational map does not intimidate community members into believing that their opinions or experiences are invalid – instead it encourages people to say: "I do not necessarily agree with this" (Chusid 2017). Frantz often supplements the encouragement of the map with his own words: "I present my maps as, 'This is what I've discovered. This is my feeling,' keeping open the question: 'What do you think?'" He purposefully avoids phrases like, "This is how things are," that classify the map as indisputably realistic, instead using vocabulary that invites criticism and feedback (Frantz 2017). Purposefully faulting the map as such transforms it from an image into a canvas, from a representation into a conversation.

The Map as Common Ground

Under such interactive conditions, the physical map itself becomes a tool for consensus building, a shared surface on which and about which to form a possible agreement. For, even

though maps depict land that is familiar to, experienced by, and owned both individually and collectively by community members, their feelings about and visions for this "common ground" are often anything but shared.

The map, then, depicts common ground that is also "contested territory" – it shows shared space for which disparate visions compete. As Corner (1999) writes, "The map assumes an enabling or facilitating status for otherwise adversarial groups to try and find common ground" – it allows people to come to a shared vision for their shared community (p. 140).

Professor Jennifer Minner has experienced this unusual capacity of maps to open and change minds even under seemingly intractable circumstances. She was working on the City of Austin's Sustainable Places Project when it was labeled a vehicle for a "United Nations takeover" by Alex Jones – a well-known conspiracy theorist – whose comments sowed distrust among some community members. The Sustainable Places Project, funded by a grant from the U.S. Department of Housing and Urban Development, sought to analyze the feasibility of community and regional-scale sustainable and smart growth scenarios for Austin's future development. Jones construed that as a means by which the federal government was implementing purported United Nations' initiatives regarding land ownership and wealth distribution at the local level. Jones also claimed that the community meetings held by the Sustainable Places Project had "pre-determined outcome[s] already decided upon by those who ultimately called the meeting … [with] the final outcome driven by leading questions and pre-set answers" (The Alex Jones Channel, 2012). Community meetings that took place in the shadow of these delegitimizing claims were noticeably tense, with a group of people coming to express marked incredulity. Minner (2017) reports:

> *There was a very tense meeting in one community where a group of people had picked up the Alex Jones conspiracy [theory] – in which he interpreted the project as a United Nations takeover – and they were very concerned. There was a police presence at the meeting that made everything even tenser; it was definitely a complicated picture.*
>
> *However, there was at least one young man who came with that group [of skeptics] who started to participate around a small table with a map on it. In these meetings, people would gather around the map as if they were gathering around a campfire; you get a sense that everyone is staring into the same thing and having a conversation they would not normally have. Even the young man who came very suspicious of the whole process seemed to start to think that maybe there was something more to this than what Alex Jones was saying – he became more receptive to communication.*

The young man's mind was opened despite his presumptions and the common map served to disarm his initial hostility. Had the group gathered around an empty table, it is unlikely that the young man would have participated in the same cooperative manner; without a map to ground and channel their efforts, the group might have descended into a more partisan dispute. As Richards notes, "Everyone gathers around the map, and it changes the dynamic of the conversation" (Filipau, 2014, p. 24). Much like the looser conversation often associated with late-night chats around a campfire, the map "enable[s] social forms of interaction" and conversation that would otherwise be stifled by conventional mores of abstract "argument" and that might be derailed by participants' suspicions of conflicting opinions (Corner, 1999, p. 243). Participants are reminded, by literally seeing the common ground that they call home, that they do indeed have shared interests. This realization can temper enmity and focus attention so that

participants can "negotiate their relationships with each other, with space, and with power" (Sletto, 2009, p. 465). In this way, the map acts as a lubricant for mutual regard and communication, even amongst quite antagonistic groups.

The Map as Grounding

As opposed to simply speaking, drawing and, by extension, mapping have the powerful ability to make the abstract concrete. An idea that is simply voiced is not nearly as compelling or tangible as one that is drawn on a map. As Forester argues, marking up the map "give[s] specific meaning to abstractions" (Forester, 2008, p. 100). Indeed, "people are more creative when they manipulate objects or draw, than when they just talk about physical things in abstract terms" (Filipau, 2014, p. 13). By contrast, planning without maps is relegated to abstraction and generality; "without things to point to and collectively peruse, the conversation loses specificity and precision" (Beauregard, 2012, p. 186).

Minner's students, while working on a plan for Ithaca's Greater Southside neighborhood, experienced this dissociative effect of planning "without things." Minner (2017) recalls the experiences of her students as follows:

> *[Greater Southside] is actually an area that includes four neighborhoods. There was a lot of discussion about 'that's not Southside' or 'this is Southside' – confusion about the boundaries of the neighborhood and what the neighborhood should be considered.*
>
> *I recall one report back from a group of students that didn't bring the [boundary] map and then they found out, toward the end of the interview, that the other person was thinking of Southside very differently [than the students were].*

In this case, the conversation between Minner's students and their interviewee was "highly speculative." Without the map to ground their conversation, "each participant was unsure as to the references made by others." Though each side assumed that the other conceived of Southside in the same way, in reality, the students and the interviewee envisioned different boundaries. With a map to "focus deliberations," the boundary discrepancy would have been immediately evident as each party would have been able to "*see* what [the other] meant" (Beauregard, 2012, p. 184; Rowe, 2015, p. 41). But, without the map, the students were unable to realize this disconnect until the very end of the interview. Bereft of a mutual understanding of Southside's boundaries, the conversation between the students and the interviewee was rendered less useful than it might have been otherwise, for they spoke only abstractly of two different places they both referred to as Southside.

The map matters, then, for producing shared perspectives – it bounds the conversation to a common physical setting and provides a canvas on which to transform speech from abstraction into representation. Indeed, as Beauregard (2012) argues, because "planning talk is about things that can only partially be presented with the spoken word," (p. 186) the map is necessary to "reinforce the words" (p. 184).

We find that the professionals in these practice stories used maps to stimulate inquiry and discovery, to facilitate productive conversation, and to help build consensus and shared visions. But, before the professionals could use mapping in these productive ways, they had to reframe people's assumptions about maps and map makers – presenting their maps as fallible and open to criticism and presenting themselves as willing to learn. The successes and failures of these professionals demonstrate that the opportunities of mapping can only be fully realized when the dangers of mapping are first carefully considered and addressed.

Conclusion

From the analysis of these practice stories, it has become clear that people understand maps in diverse and complex ways that influence how they interact with them. As Richards says, "In my experience [people] understand maps a lot better than we give them credit for" (Rowe, 2015, p. 17). Most people can read maps and intuitively understand the spatial relationships that they depict – a community member is probably just as able to navigate with or identify features on a map as is the planner who made the map. Yet, the community member's perception of the map differs from the planner's. The community member, in his possible reverence for the "scientific" accuracy of the map and the technical expertise of the planner who made it, can be intimidated and dissuaded from criticizing the map. That disempowerment can, in turn, require the planner to address and subvert those preconceived notions – to "problematize the ontological security of the map" – in order to transform the map from what seems to be a static representation into part of a dynamic conversation (Kitchin et al., 2009, p. 17).

The Preconceived Notions

Community members' perception of maps as quintessential "truth document[s]" was particularly pervasive in almost all of the practice stories. The seemingly widespread conviction that a map "represents the world as it really is with a known degree of precision" led community members, in Frantz's case, to hesitate in marking up the map for fear of contradicting "reality." Compounding the effect of the perception of the map as unquestionably authoritative is the perception of the process of mapping as a "scientific endeavor" – one that requires technical expertise (Kitchin et al., 2009, p. 4). This conception of mapping as "elite discourse" creates a disconnect between the map maker and the map viewer; it reinforces the understanding of the

maker as visualized in the map and it diminishes the viewer's perceived ability to impact that map (Perkins, 2003, p. 344). Chusid's case emphasizes how this disconnect between map maker and map viewer can be exacerbated by today's sophisticated mapping software which, compared to more traditional methods, limits the ability of map viewers to participate in the mapping process. Frantz's case also warns against maps that are presented as prescriptions rather than suggestions – a mistake which he learned only serves to perpetuate the disconnect between technical experts and community members. Indeed, the view of the map maker as an expert, much like the view of the map as a truth document, can intimidate community members into submission, stifling their attempts to make corrections and improvements.

The Need to Reframe Preconceived Notions

Nevertheless, these practice stories have shown that community feedback can make important contributions to the mapping process. In Primdahl's case, for instance, community members drove around their parish to verify or contest the boundaries that the landscape architect had mapped. Similarly, in Frantz's case, the Town officials rejected and requested a modified version of the map that the students had created because its underlying methodology did not reflect the Town officials' conception of a scenic resource. These experiences show that the map that a planner presents to community members is never truly finalized, and neither planner nor community member should conceive of it that way. The map will inevitably be "created and erased many times over" as community feedback is used to inform and refine each new iteration (Crampton, 2001, p. 239).

If mapping inevitably requires feedback, how, then, do professionals reconcile the seemingly immutable nature of maps and the perceived divide between maker and viewer with

the need to encourage and facilitate community input? Chusid tackles the unquestionable authority of the map by purposefully faulting it; he intentionally omits certain features of the map so that community members can correct the map by filling them in. Frantz, likewise, encourages feedback by defacing his own work; he makes the first mark on the map to contradict its supposed perfection and, in doing so, he invites others to do the same. Frantz also encourages feedback through the way in which he presents his work, telling community members, "These are my ideas. This is what I think," before asking them, "What do you think?" Through this exchange, Frantz conveys to community members that he perceives his maps as tentative, alterable ideas for the ways in which things *could* be done, not as rigid, unchanging commands for the ways in which things *should* be done. Through these strategies, planners relegate their maps to the status of fallible drafts, affording meaningful involvement and restoring ownership to the locally-grounded experts of the community – the residents.

As these practice stories have shown, a map can be many things – from a quasi-language, to a vehicle for finding common ground, to policy in and of itself. The act of mapping is equally versatile and can be both dangerous and powerful in its execution. Professionals like Primdahl and Richards and educators like Chusid, Frantz, and Minner have demonstrated – through their own experiences – that mapping in practice is nuanced and complex. Map makers must address map viewers' preconceived notions about maps, navigate power relations, and temper their own convictions in order to frame the map not as a static, incontestable representation of reality, but rather as a tool for conversation, collaboration, and co-production. The lessons learned from the practice stories presented in this essay should be seen, not as rules, but as guidance for mapping in professional settings. In practice, maps should not be merely the epistemological abstractions

they are in theory, but they should be instead practical products emerging insightfully from and in real world experiences.

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