

Media and Communication

Open Access Journal | ISSN: 2183-2439

Volume 7, Issue 3 (2019)

Civic Organizations and Digital Technologies in an Age of Distrust

Editor

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Media and Communication, 2019, Volume 7, Issue 3
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Published by Cogitatio Press
Rua Fialho de Almeida 14, 2º Esq.,
1070-129 Lisbon
Portugal

Academic Editor
Eric Gordon (Emerson College, USA)

Available online at: www.cogitatiopress.com/mediaandcommunication

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Editorial

Civic Organizations and Digital Technologies in an Age of Distrust

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Submitted: 26 July 2019 | Published: 6 August 2019

Abstract

How are civic organizations using new and emerging technologies to adapt to a new context of distrust? This editorial contextualizes new research on trust and organizations in civic life and identifies a number of key factors contributing to the urgency of the work. As publics grow increasingly suspicious of the institutions that mediate civic life, including news, government and civil society, organizations are adopting new tactics to accommodate this new reality.

Keywords

civic organizations; distrust; fake news; information communication technology; innovation; social infrastructure

Issue

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Recent years have brought to the foreground concerns about the motivations and legitimacy of the institutions that mediate public life, including news, government and civil society (Knight Commission on Trust, Media and Democracy, 2019). As new voices, previously excluded from popular discourse (including women, immigrants, and people of color) are amplified through technical and social means, the institutions that once so effectively served the center are being forced to open up and reorganize. Major news organizations like the *New York Times* and the *BBC* served “the public” well, when that public was accepted as a narrowly conceived of majority. But as contemporary digital technology and culture have enabled new voices and new influence (Allen & Light, 2015), those same news organizations are challenged to become more broadly representative, with cries from the left that they have systematically ignored and excluded women and communities of color, and cries from the right that they serve a globalist establishment that is ignoring the forgotten (white) center. Donald Trump, the president of the United States, is fond of referring to the “fake *New York Times*,” as the enemy of the people. In doing so, he associates “people” with what was once comfortably referred to as the “public.” Major news outlets along with the thousands of smaller organizations that comprise the institution of news, are feeling pressure to

adapt and are taking a range of actions to do so. Some of these actions include building and adopting new technologies, and others include making time and space to forge new, and support existing, relationships (Lawrence, Gordon, DeVigal, Mellor, & Elbaz, 2019).

The same is true for government and civil society organizations who have been comfortable with business as usual and are now feeling the pressure to become more responsive to emerging publics. In government, as citizens have come to expect better service delivery, more equitable distribution of services, and proper representation, organizations are being asked to do things differently. The resulting practices are messy, not at all consistent, and in some cases, merely placating. Hiring consultants to better “engage the public” is not the same as fostering trust through relationships and trustworthy transactions. As a means of transforming how publics interface with government, some organizations are enthusiastically pursuing new innovation offices (Jacob, 2015), and some are hiring better and more engagement practitioners to realign how the government speaks and listens (Gordon, 2017). In most cases, these practices are well intentioned and fraught.

This thematic issue of *Media and Communication* brings together research on how organizations are responding to this emergent context of distrust through

the use and/or critical engagement of digital technologies. Most of the articles included here focus on how individuals are negotiating programmatic needs of organizations with the practical adoption of new tools and approaches. Whether it's the use of social media in a local non-profit, or the design and implementation of an open data repository in government, each of the examples in this issue is implemented with the sensitivity of needing to create or maintain trust with the publics that organizations serve. This set of concerns with the adoption of technology is relatively new. While scholars have long pointed out the challenges of integrating new technologies in organizational structures (DeScantis & Poole, 1994), never before have those challenges focused so intensely on building trust, not just with the immediate end users, but with the organization's broader constituencies. How organizations in the civic space shift and accommodate new tools and processes are increasingly guided by non-instrumental factors. In other words, it is not just about what new technologies do for organizational systems, but how they support or erode systems of trust (Wells, 2015). Recent scholarship has identified a variety of contexts and situations where these dynamics play out, particularly in government (Bannister & Connolly, 2014). Klinenberg (2018) looks outside of government organizations to spaces within cities. He describes social infrastructure, or the actual spaces that support relation and trust-building, including libraries, meeting halls, and other spaces designed for interaction. And Gordon and Mugar (in press) introduce the concept of "meaningful inefficiencies" that extends the concept of social infrastructure to any space (physical, social, digital, etc.) that is deliberately designed to enable civic interaction and support relation, often in contrast to the logics guiding technological progress.

This short issue includes five articles that seek to capture emerging tactics of organizations to engage in what Peter Levine calls "civic renewal" (Levine, 2013). The first, by Eric Gordon and Rogelio Lopez (2019), is entitled "The Practice of Civic Tech: Tensions in the Adoption and Use of New Technologies in Community-Based Organizations". This article presents ethnographic research with an influential community organization in Boston, United States, that examines how people within the organization think about and put new technologies into use. The article points out the tensions that emerge for individual practitioners and for the organization as a whole as technologies are adopted. Notably, the authors focus on the tension between function and representation, or what tech actually does versus the optics of its use. The next article by Mariam Asad and Chris Le Dantec (2019) is called "'This is Shared Work': Negotiating Boundaries in a Social Service Intermediary Organization". Similarly, this research looks at technology adoption and use in an organization in the American south focused on criminal justice reform. But instead of looking at internal dynamics alone, Asad and Le Dantec (2019) examine the interactions between the organization and the researchers. Ulti-

mately, they surface the limitations of participatory work for issue-based organizations committed to progressive social change, further challenging the notion that technologies can capture lost trust.

The next set of articles ask different questions. Rajab Ritonga and Iswandi Syahputra (2019) look at citizen journalism in Indonesia, specifically as it manifests on Twitter. In their article "Citizen Journalism and Public Participation in the Era of New Media in Indonesia: From Street to Tweet," they interrogate how people come to trust information shared on Twitter and why mainstream news outlets are increasingly criticized as being too closely aligned with the state. Their insights into information ecosystems, and specifically how trust is negotiated between existing and emergent information channels is incredibly important for the larger understanding of how individuals and organizations make decisions about what's trustworthy and what's not. Nathan Sanders' (2019) article entitled "AMEND: Open Source, Data Driven Oversight of Water Quality in New England," is a case study of an open source repository for environmental data. This article examines the implementation of an open data resource and points to the way that data transparency and access can overcome some of the technical and social barriers to building trust. The article describes in practical detail how the tool was built and the challenges of uptake across a range of different interest groups and organizations.

The final article in this issue is by Eric Corbett and Chris Le Dantec (2019). Their article, "'Removing Barriers' and 'Creating Distance': Exploring the Logic of Efficiency and Trust in Civic Technology," explores the contrast between trust building and efficiency. Based on ethnographic work within government organizations, they explore how civic technologies intended to remove barriers and increase efficiency can sometimes run counter to the work of relationship and trust building. They conclude with suggested processes whereby government organizations can centralize the goal of actively building trust while adopting and implementing civic technologies. They touch on the design challenge of creating meaningful inefficiencies and demonstrate the intensity of work required by dedicated practitioners to prioritize relationship building when the dominant logic of technology encourages the fastest path to completing transactions.

Together, the five articles in this thematic issue examine multiple dimensions of the task of building trust in civic organizations, and the complicating factors introduced by the adoption and implementation of digital technologies. From news to government and civil society organizations, the use of technology to facilitate civic renewal is complex and often counter-intuitive. Each one of the articles collected here illustrate that digital technologies can aid civic organizations in their programmatic work, but, if not thoughtfully implemented, can erode the institutional values on which the organization needs to stand.

Conflict of Interests

The author declares no conflict of interests.

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Article

The Practice of Civic Tech: Tensions in the Adoption and Use of New Technologies in Community Based Organizations

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Submitted: 5 April 2019 | Accepted: 10 July 2019 | Published: 6 August 2019

Abstract

This article reports on a qualitative study of community based organizations' (CBOs) adoption of information communication technologies (ICT). As ICTs in the civic sector, otherwise known as civic tech, get adopted with greater regularity in large and small organizations, there is need to understand how these technologies shape and challenge the nature of civic work. Based on a nine-month ethnographic study of one organization in Boston and additional interviews with fourteen other organizations throughout the United States, the study addresses a guiding research question: how do CBOs reconcile the changing (increasingly mediated) nature of civic work as ICTs, and their effective adoption and use for civic purposes, increasingly represent forward-thinking, progress, and innovation in the civic sector?—of civic tech as a measure of “keeping up with the times.” From a sense of top-down pressures to innovate in a fast-moving civic sector, to changing bottom-up media practices among community constituents, our findings identify four tensions in the daily practice of civic tech, including: 1) function vs. representation, 2) amplification vs. transformation, 3) grassroots vs. grasstops, and 4) youth vs. adults. These four tensions, derived from a grounded theory approach, provide a conceptual picture of a civic tech landscape that is much more complicated than a suite of tools to help organizations become more efficient. The article concludes with recommendations for practitioners and researchers.

Keywords

civic sector; civic technology; community based organizations; community organizing; information communication technologies; innovation; youth media

Issue

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1. Introduction

Mobile websites for government services, social media tools to connect local neighborhoods, transportation apps to track buses and trains: these are examples of what are often called “civic technologies,” or technological tools that promote, facilitate, or coordinate civic actions (Open Plans, 2012; Gordon & Mihailidis, 2016). The space of civic technology (civic tech) has grown significantly since 2012, propelled partly by the non-profit

Code for America (Schrock, 2018), as well as small start-up companies embracing the term, and tech giants such as Microsoft and Google developing civic tech divisions. The context to this shift in professional practice is a growing data infrastructure that has prompted changes in government decision making (Heuer, Penrod, & Kattan, 2007; O'Brien, 2018) and approach to service delivery (Noveck, 2008). The enthusiasm around open data (Goldstein, 2013) and civic tech has motivated scores of municipal governments to form “innovation offices”

charged with inventing and integrating technologies that enable and streamline the work of government (Bowles & Giles, 2012; Jacob, 2015). These inchoate offices are focused on inventing new tools or creatively adapting existing ones (i.e., Facebook or Twitter), and generally bridging the organizational cultures of government bureaucracy with tech-sector entrepreneurialism (Poje, 2011; Wells, 2015). The technology evangelist Tim O'Reilly's concept of "government as platform" has guided the work of Code for America in particular, and advocates for government to be a more nimble staging area for experimentation and innovation by serving as a platform for services (internal or third-party) and not simply a provider of services (O'Reilly, 2010). Municipal governments are attempting to overhaul procurement procedures in order to more effectively partner with companies and universities. Part of the promise of civic tech has been the potential to circumvent inefficient bureaucracies by facilitating a more participatory and open environment between citizens and civic organizations—government or otherwise.

As a result of, or at least in parallel to, this momentum in government, civic tech is gaining influence in the civil society sector as well. Among non-profits and social enterprises, the desire to use technology to connect with and empower constituent participation is increasing. Civic organizations, from small community-oriented non-profits to advocacy organizations, are attempting to bridge the gap between decision-making and civic participation through the development or appropriation of information and communication technologies (ICTs).¹ For many civic organizations, ICTs represent an opportunity to re-conceptualize longstanding methods to increase civic engagement and political participation, such as grassroots community organizing aimed at engaging people historically excluded by electoral and deliberative politics (Nabatchi & Leighninger, 2015). Whether it is connecting to constituents, streamlining the use of data, changing organizational culture, or engaging different or younger people, the use of ICTs for the purpose of promoting, facilitating or coordinating civic actions is perceived as an increasingly important part of organizational missions and cultures (Gordon & Mugar, 2018; Patel, Sotsky, Gourley, & Houghton, 2013; Place Matters & Ford Foundation, 2014).

While some attention is paid to these shifting cultures, the academic study of civic tech is still very much concerned with evaluating the effectiveness of individual tools (Simon, Bass, Boelman, & Mulgan, 2017; Schrock, 2018). And while this is important work, it leaves out potential to examine social and cultural factors that influence the adoption of ICTs by civic organizations. There is a need to understand how technological innovations generate interest, get deployed, get used in practice

(Couldry, 2012) both intra- and extra- organizationally, and how they are sustained over time within the social, civic and political realities of their use. In the current study, we investigate how ICTs are transforming civic practitioners' understanding of their work, specifically within community based organizations (CBOs). This goal is guided by two central research questions: 1) As ICTs—and their promise to democratize and facilitate participation—proliferate in the civic sector, how do CBOs reconcile their need to innovate, modernize, and stay on-the-cutting-edge technologically while also securing their continued role as brokers between (and amongst) citizen constituents and local governments? And 2) How do CBOs remain relevant at a time when people are more and more able to self-organize through digital networks, or as Clay Shirky (2008) asserts, organize without organizations? If ICTs allow individuals to self-organize, advocate, and petition local authorities, processes which CBOs themselves have long facilitated on behalf of communities, then what is the role of the organization and how do they build and sustain relationships with their constituents? In an almost existential crisis, CBOs must simultaneously adopt ICTs to survive in a competitive civic sector to showcase relevance (at least for funding) while also retaining their grassroots identities as the champions of communities at large.

We locate the practice of civic tech as a kind of institutional entrepreneurship, which Maguire, Hardy, and Lawrence (2004) define as "activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones" (p. 657). The lens of entrepreneurship over organizational change allows for the consideration of greater agency than does the mainstream of organizational studies (Garud, Hardy, & Maguire, 2007). The current research looks at the specific tensions that arise between individual actors (and the agency they bring to public work) and the institutional logics that guide the organizations at which they work in the context of technology adoption and adaptation.

Within CBOs specifically, we seek to understand where the tensions exist between adoption and use, and how practitioners are struggling with contradictions that technological mediation inserts into "public work." Harry Boyte (2019) defines public work as "nonviolent collaborative work across differences filled with public purpose and impact." This study focuses on the tensions that emerge as public work is mediated by civic organizations. The primary site of the research is the Dudley Street Neighborhood Initiative (DSNI) in Boston, MA. Founded in 1984 by residents of the neighborhood, it has grown substantially and obtained significant influence in the Boston area. It is the first and only organization in Boston

¹ While the term ICT captures most of the tools and processes we are referring to, there are some (non-digital) technologies that are also referred to as civic tech (i.e., community white boards, analog games, etc.). We will use the term ICT to encompass all information and communication technologies; but in some cases, specifically when people are responding to a broader context, we will use the term "technologies" to refer to the general space inclusive of ICTs, but that extends to other, potentially non-digital and non-networked tools.

to gain the power of eminent domain by the Boston Redevelopment Authority (Medoff, 1999). We look at how DSNI has incorporated new technologies into its work. This includes the staff meetings where new digital tools get proposed, the challenges of interns running an organization's website or an outside developer introducing new tech that sits outside of the normal ways of doing things, and existing engagement methods like grassroots community organizing. Through our interviews and observations, we uncover the everyday moments where new technologies and new tools push up against practitioners' perceptions of doing good public work.

Bruno Latour's (1990) Actor Network Theory (ANT) provides some insight into this phenomenon. The tensions that emerge within organizations as new technologies are introduced has to do with how humans delegate tasks to non-humans, such as using Facebook to organize interest groups or using municipal reporting applications to take in complaints. Each of these delegated tasks brings up some anxiety or tension not only between human and non-human actors, but also between human organizations and automated digital networks. For example, once people adopt a tool, to what extent do they give that tool agency to do public work? ANT provides a mechanism to consider agency in organizations as belonging not only to human actors. Such a theoretical framework allows for a deeper understanding of tech tools in the life of an organization. But our central concern is not the mapping of actors in a network, but rather an understanding of the tensions that emerge when human actors are presented with the opportunity to delegate their public work to non-human agents.

We identify four primary tensions civic organizations experience as they delegate to non-human actors. Each of the tensions is not a silo, but an overlapping set of concerns and anxieties that run through the adoption and use of ICTs. Tensions should not be considered binaries; instead, they represent a range of emotions and challenges experienced by practitioners. They include 1) Function vs. representation, 2) Amplification vs. transformation, 3) Grassroots vs. grasstops, and 4) Youth vs. adults. These tensions are described in rich detail in the discussion section, and their implications for practitioners and researchers are explained in the conclusion.

2. Methods

We use a mixed methods approach. Data collection includes participant observation (over 50 pages of handwritten notes) and semi-structured interviews (32), taking place over nine months between September 2013 and June 2014. The ethnographic portion of this study pertains to the DSNI in the Roxbury neighborhood of Boston, MA, where a researcher was embedded as a par-

ticipant observer. This researcher worked twenty hours a week within the organization, helping with the implementation of new tools and observing meetings and organizational structures. Additionally, the researcher coordinated with an external technology team that helped to design and implement new civic tech tools within the organization, including an online deliberation platform, informational touch screens in storefront windows and workshops on videography for youth. Journal-style notes were collected on a daily basis, with an emphasis on providing a thorough and richly detailed account of the organization's culture and day-to-day activities—especially as pertaining to the use of communication and media. 14 members of the organization's staff were interviewed at least once, and hours of observations were recorded. The 18 interviews at DSNI were semi-structured and were typically about an hour in length. All interviews from this organization are represented by the prefix DSNI in the citation, followed by a number (1–14). Follow-up interviews are represented by the number 2 following a dash (i.e., DSNI-2). The interviews represent all levels of the organization, from executive directors, to communication specialists, to community organizers, in addition to various degrees of experience within the organization across gender, race, ethnicity, age, and time with the organization, all intentionally selected by the embedded researcher as a means to capture a holistic overview of technology practice in a CBO.

While an ethnographic approach with a single organization would have itself provided important insights, we wanted to look outside DSNI to get a sense of broader applicability. Concurrent to our being embedded within DSNI, 14 interviews were conducted by another member of the research team with leaders in similar organizations throughout the country. This reach to these additional organizations gives us more confidence that the identified themes are not anomalous to a single organization. The interviews came from organizations primarily in the Northeast (10), with some from the Southwest (4). Two thirds of the interviewees were from small organizations (<15 employees). These organizations were identified by the research team and contacted directly because they occupied similar goals and organizational mission, engagement approach, target communities and constituents, and publicly identifiable efforts to “modernize” for the digital age as our primary CBO, DSNI. Regardless of the organization's size, tech competency (determined by the researchers) varied considerably, and was not at all correlated to the size of the organization.² The tech competency of DSNI, not represented in Table 1, is high. The same questions asked of DSNI were asked of the other organizations, save those specifically about the new tools implemented in DSNI. Interviews from these organizations are represented by the prefix

² The measure of tech competency, which is represented in Table 1, was based on the assessment of the research team. When considering tech competency, the team looked at online presence (websites, social media), positions dedicated to technology and media (communications managers, social media organizers), publicly available technology focused grants or projects, the “newness” of public technology, among other things. The interview subjects were not asked to explicitly characterize their organization.

Table 1. List of organizations and their characteristics.

ID	Geography	Staff/ Size	Target/ Population/Served	Services/Provided	Focus	Tech Competency
NB1	Northeast	<15	Brazilian-Immigrants	Advocacy, Job Training	Immigration rights, advocacy	Low
NB2	Northeast	<15	Specific Neighborhood	Advocacy	Community Development, Resilience	Medium
NB3	Northeast	<15	Specific Neighborhood	Advocacy	Health, Sustainability	Low
NB4	Southwest	<15	Underserved Populations	Direct Services, Advocacy	Access to Food, Advocacy	Medium
NB5	Northeast	50–75	Regional Communities	Advocacy, Data Services	Urban Planning,	High
NB6	Northeast	20–30	Regional Communities	Advocacy, Data, Network Infrastructure	Urban Planning	Medium
NB7	Southwest	20–30	Underserved Populations	Advocacy, Professional Development; Network Infrastructure	Healthcare	High
NB8	Northeast	20–30	Specific Neighborhood	Advocacy and Policy	Housing, Economic Development	Low
NB9	Northeast	<15	Regional Populations	Advocacy	Healthy Living	Medium
NB10	Southwest	<15	Nationwide	Community Planning, Programming and Resources	Urban Farming	High
NB11	Northeast	<15	Youth	Programming and Advocacy	Youth Activism	Medium
NB12	Northeast	<15	Regional Populations	Network Infrastructure	Collaborative Consumption	Low
NB13	Southwest	<15	Women	Programming and Advocacy	Education	Medium
NB14	Northeast	20–30	Youth	Programming	Arts and Technology	Medium

NB (not-Boston) in the citation. In total, we conducted, transcribed and analyzed 32 one-hour interviews.

Using a grounded theory approach (Glaser & Strauss, 1967), coding of the interviews started during data collection, with codes being based on themes that emerged across the earliest interviews, and the codebook was iteratively developed throughout. Grounded theory allowed us to gather insights directly from a real-world, and lived experienced setting, without organizing our data collection around the resolution of specific hypotheses. As new codes were developed from fresh insights, they were applied to all the interviews using the qualitative analysis software Dedoose. To assure intercoder reliability, each interview was analyzed by at least two researchers and the codes were cross-referenced.

3. Results

We set out to answer two questions: 1) how do organizations innovate with technology while staying on mission? and 2) how do organizations stay relevant in a changing digital culture? Early in our analysis, themes began to repeat. The enthusiasm we had expected to unpack actually manifested as a series of tensions. Common to everyone we spoke to was a deep ambivalence, a sense that technology was both helping them do what they needed to do, and pulling them further and further away from those goals. Each of the tensions was articulated as contradiction and site of struggle (see Table 2). In this section, we briefly introduce the tensions and then elaborate based on the interview data.

Table 2. Description of tensions.

<i>Function vs. representation</i>	Technologies in practice are always caught between function (or the immediate problems the technology is meant to solve and/or basic utility) and representation (or the meaning and symbolism that technology use generates both within and outside of the organization). This often manifests as a generalized anxiety among practitioners, especially when technology adoption is negotiated between the use and function of new technologies and the symbolism that those technologies bring to an existing organizational culture and context.
<i>Amplification vs. transformation</i>	When communicating with constituents, many organizations default to a broadcast model of digital communication, where they use social media to broadcast an existing message out from a centralized position. This is opposed to a transformational model, where they engage in conversation with a broader public to alter an existing message, and meaning making is distributed horizontally. This is often the result of not understanding possibilities, and is most often seen as a point of tension.
<i>Grassroots vs. grasstops</i>	An organization’s feeling of authenticity is often captured in its technology use. Specifically, technology can sometimes be seen in opposition to the grassroots, which is very important to a certain generation of community based organizations. In many cases, an organization’s use of technology was in direct dialogue with their identity as a “boots on the ground,” “paper in hand” organization. This largely face-to-face model seemed to be challenged by the increased mediation possible with new ICTs, and this in turn led to unease/anxiety about a grassroots CBOs’ identities.
<i>Youth vs. adults</i>	Even though the organizations we interviewed were not focused solely on youth work, they tended to think about their technology practices in generational terms. For most organizations, all new technologies were strongly associated with youth, even when they were not directed towards them, and youth were often considered tech savvy and thus valuable sources of tech-related knowledge.

3.1. Function vs. Representation

ICTs are adopted by organizations to solve real or perceived problems, ranging from the lack of efficiency of internal processes to insufficient community outreach and education (Gordon, Baldwin-Philippi, & Balestra, 2013). The decision to adopt or create technologies is typically justified by their functional purposes (“we need to use social media to better reach youth”). But ICTs are burdened with meaning long before they are ever put to use (“social media represents innovation or progressive thinking”) (Orlikowski, 2000; Sinclair & Vogus, 2011). One of the most important reasons why organizations adopt ICTs is the fulfillment of what the technology represents rather than the utility of what it accomplishes. In other words, when a community organization uses Facebook, they are seeking to get something done, but they are also seeking to represent that they can get things done. ICTs in CBOs are often used as an externalization of process; they are the purview of the communications specialist as much as they are the community organizer.

Consequently, when considering technology use in organizations, users bring existing meanings or perceptions of technology into their practices. The ways in which individuals and groups produce and share meanings of technology can be just as important as how they ultimately use them. The meanings people assign

to ICTs structure their interactions with them—i.e., if Facebook is seen as a threat to one’s job, one is likely to adopt it with caution and resentment. The sociologist Anthony Giddens’ referred to this general process as structuration, wherein members of a social system produce and reproduce the systems in which they operate through acting within those systems (Giddens, 1986). The rules of any given bureaucracy are enacted, for example, they don’t just come into being through written rules. Giddens’ was interested in organizations and social life; he did not specifically refer to technologies, but this has been a logical domain for the application of his approach. Structuration theory has been adapted to this context within the tradition of adaptive structuration theory (AST), which asks how the rules (general logics) associated with particular technologies reinforce and are in tension with organizational rules and structures. DeScantis and Poole (DeSanctis & Poole, 1994) define AST as a framework for studying variations in organizational change, specifically as it pertains to those moments of collision wherein the rules of a technology confront the rules of an organization.

The perceived benefit of a technology is often aligned with how others perceive its use, rather than what work it actually accomplishes. Using a mobile app to solicit feedback from constituents can provide useful data, but it can also make the organization appear innovative to the outside world. As people within organizations make

decisions about adopting new technologies, there is a give and take between what work the tool actually does, and how people perceive organizations that use such tools. Indeed, sometimes representation can be paralyzing and/or significantly sacrifice the integrity of the functional adoption of tools.

As one leader of a youth organization put it: “I think it is a priority for everybody. If you’re not being tech savvy nowadays, you’re going to fall behind” (NB11). This sense of falling behind was a common theme among organizations, and typically was not associated with any one thing or tool, but a general unease with being perceived as a late adopter. Tech obsolescence was generally associated with organizational obsolescence. When it comes to technology, “we’re just dreadful,” according to a leader of a medium sized community based organization. “We could just coast for a period of time, but not forever. The organization is at risk if it doesn’t find a way to put itself in a much more progressive, tech enabled...place” (NB6). This is not just a risk of being unresponsive to the communities it serves (a functional risk), but perhaps more importantly, not appealing to funders and boards (a representational risk). Of course there is some slippage here. Funders want evidence of function. They want to make data-informed decisions about what they support. But of course, funding priorities are often influenced by perceptions of progress, which tend to be correlated to new and emerging tools or technologies. This is certainly not always the case, but it was a frequently articulated sentiment from those working within CBOs.

The interview protocol we developed was focused on individual practitioners’ relationship to the tools they use to do their work. We asked about how they make decisions about new technology, where they see themselves excelling in their work, and where they feel a sense of urgency. And, we asked them how they see the responsibility of their organization changing as work gets done through new tools and processes. The last question in the interview was meant to be playful and a bit provocative. We asked people to come up with a metaphor that describes their organization’s use of technology. The question did not elicit feelings of enthusiasm that we assumed would characterize technology adoption; instead fear, confusion, and pointlessness were most commonly evoked. One person described their relationship to technology as “a deer in the headlights” (NB06). Another referred to technology as a “sourdough starter”: “It’s like you have to keep feeding it. You have to keep upgrading skills. You have to keep on top of technology and if you don’t everything sort of dies or withers on the vine” (NB05). And another said, “technology is like a spiral staircase....It is constantly going to be running at this pace that you are not able to catch up with” (NB13).

The metaphor question provided some insight to the fact that people, regardless of the tech savviness of the organization, wanted to couch their perspective in a context of instability, disruption, and rapid change. They wanted to set the bar low so as to shield themselves from

any potential expectations that the researcher brought to the conversation. As the research was presented to subjects as being about technology, most people felt the need to present themselves as non-experts and to present technology in general as an overdetermined category with specific meanings. Most were rather forthcoming with their feelings of anxiety, carefully framing other remarks in this context. This represents the instability that organizations feel in adopting new methods, especially when they feel those methods are thrust upon them by outside forces. “My observation is everything keeps changing all the time. It gets kind of frustrating after a while when everybody has moved on to the next thing and it’s like, ‘Wait, I didn’t figure this one out yet’” (NB3). Adopting new tools to reach constituents was talked about as something people *should* be doing more of, if they only had the internal capacity to do so. Keeping up is an integral part of technology adoption; it is reflective of the availability of technical skills within organizations, but also the desire for relevance in an increasingly market-driven space of civic organizations.

The anxiety and promise of new tech tools presents a productive tension for most organizations. In fact, when we started this work, we assumed that the potentiality of tech would be the fundamental driver of adoption and use; but as it turned out potentiality and hopefulness were nearly always coupled with a sense of anxiety around keeping up and using tools well. This challenged our assumptions about the value of new tools and the capacity of organizations to use them. But the primary tension we identified was not within internal operations, but in the correspondence between the technology and the mission of the organization—especially when direct, face-to-face engagement characterizes the relationship with community constituents. How does technology connect to the grassroots? What are the gaps between online communication and face-to-face relationships? In the sections that follow, we explore this tension as it relates to the formation of organizational identities.

3.2. Amplification vs. Transformation

It’s always more of that fear. ‘Does this mean we’re not going to do the face-to-face?’ There was a lot of questions raised around who’s going to use this technology, who’s not, and so knowing that there’s a part of our population that these tools are never going to work for, and how do we make sure that their voices are still heard in the process? I think that’s the challenge, because it’s not like we can do this and so we don’t have to do face-to-face anymore. That will never be the case. I pray to God that will never be the case. (DSNI2-2)

The incorporation of new technologies into mission critical activities, such as communicating with constituents, is often met with resistance (Bimber, Stohl, & Flanagin, 2009; Mercea, 2013). DSNI, for instance, understands itself as the facilitator of community relationships and as a

vehicle for voice in the community (Medoff, 1999). But as they bring new technologies to bear on their work, they are forced to consider scenarios such as what happens when people are better able to self-organize online. Or, what happens when any individual with an Internet connection can forge direct communication lines to government? This leads to internal questioning as to the role of organizations whose missions are focused on connectivity, enhancing voice and building relationships. If people can connect on social media, then what's the value of the civic organization? The role of the organization—place-bound, centralized, and bureaucratic—is positioned in opposition to the role of technology (Boulianne, 2009; Gordon et al., 2013; Shirky, 2008). As this spirit of technology is incorporated into the structural work of an organization, the representational tensions come into wide relief, and the desire to innovate is coupled with the implications of “disruption.”

Civic organizations operate differently from industry or government agencies. While some, mainly formalized non-profits, do indeed have elements of top-down hierarchical structures, the organizations we examined in this study emphasize a horizontal and bottom-up approach for engaging with communities. For DSNI, their organizational structure is based on the idea that “the community,” defined as residents of the neighborhood serving on the board and as consulted with surveys, decides the actions of the organization (Medoff, 1999). This distinction is important to note because ICTs are seen mainly as an expansion of organizational capacity rather than necessarily addressing the limitations of organizational structures.

But mission-driven organizations are seeking a competitive edge, not necessarily from competing organizations wanting to serve the same population, but from technologies themselves. Organizations charged with representing geographically-located communities need to contend with their relevance in the wake of networked tools that profess to enable communities to represent themselves. Many of the organizations we spoke to formed in a pre-internet context where facilitation of community dialogue and networking was core to their missions. ICTs are forcing a shift where these organizations are confronted with having to cede some control of facilitation to third party technologies. According to one organization: “We’re working to have [our social media] designed so that it is largely maintained by community members and we just curate it” (NB10).

The notion of the organization as curator of a community conversation is consistent with how many organizations already see themselves in a pre-internet context. ICTs, then, are used strategically to maintain an existing narrative of grassroots organizing. In analyzing the data, we coded for the communication strategies adopted to construct that narrative. Notably, we identified a difference between the strategies of *amplification* and *transformation*. Amplification is the use of ICTs to amplify an existing message generated by the organiza-

tion, whereas transformation is the use of ICTs to transform messages through dialogue, co-creation, etc. Our interest is not in assigning value to one mode over the other, but simply to understand the intentionality behind ICT use. Most of the time, amplification was the stated goal. People sought to use ICTs to extend a message or bring attention to the organization, in the tradition of broadcast media. In some cases, this plays out along the lines of experience with technology, where less tech-savvy organizations adopt more of a broadcast model and more tech-savvy organizations tend to think about participation in networks. Some of this is due to the capacity of organizations—small organizations with a single IT person or small or non-existent communications teams, are inevitably going to be more conservative in their approach. However, most of the time, organizations demonstrated a diversity of intentions, sometimes in conflict with one another. The person in charge of communications might be focused on generating conversation, whereas the community organizer might be most interested in getting people to show up to events. For example, people at DSNI expressed a range of sentiments about the possibility space of ICTs, from a means of solidifying the organization's role in the community, to a safeguarding of transparent interactions. According to one person from the organization: “I think the goal of technology and social media would be to transmit important knowledge to the household and to the parents” (DSNI12). Or, another person suggested that the value of using “new tools...is to try and get more information out to folks in the neighborhood” (DSNI13). But within the same organization, yet another person spoke of technology's ability “to give residents a stronger voice in community planning processes” (DSNI4).

Amplification strategies reinforce the centrality of the organization within the community. They implicitly position the organization in the role of meaning-maker, with the technology aiding in that role, but not necessarily challenging it. This appropriation is a common strategy for taming unknown behaviors of new technologies, by remediating old technologies through new ones (Bolter & Grusin, 1996). The organization can point to the fact that it uses Facebook, even while not embracing the networked affordances of the tool. Transformative strategies (i.e., increasing voice), on the other hand, represent a greater openness to the organization as facilitator of meaning, not meaning-maker:

We are trying to figure out how we can use the technology to enhance some of the work that we do....I think we could really use those [technologies], not only to get the word out about the organization and people to join, but for people to really meet each other and make connections and get to know each other. (NB14)

Another organization put it this way: “I think technology really gives you a mechanism for implementing in a way

that I don't know how it could be done without technology" (NB3). It is particularly important to recognize that this diversity exists within single organizations. DSNI on the one hand wholly embraces technology and seeks to find transformative uses for it, while on the other hand, it is deeply suspicious of technology encroaching on the authenticity of the grassroots.

3.3. *Grassroots vs. Grasstops*

Many of the organizations we interviewed use grassroots organizing techniques to build their constituency. In recent years, both scholars and practitioners have examined the changing role of community organizing in light of ICTs (Bennett & Segerberg, 2012; Costanza-Chock, 2014; Minch, 2005; Stoecker, 2002). Among Social Movement Organizations (SMOs), the rise of "online organizers" represents efforts to reconceptualize community organizing for use with the Internet (Freelon, 2014; Harlow, 1996; Kahn & Kellner, 2004). Key questions to consider in this regard are: What happens to community organizing, whose strengths are tied to person-to-person engagement, when it becomes mediated? Are the affordances of new technologies interpreted through grassroots community organizing?

The concept of the grassroots, and all that it implies, featured very prominently in our interviews. Several of the interviewees mentioned specific training in community organizing, and several were staffed at their organizations as community organizers. As someone from DSNI put it: "I think that I would still say we are more, by and large, more of a face-to-face, less technology based type organization" (DSNI2). Face-to-face was characterized as more than just a strategy; it was an identity to which people connect, representing authenticity that is being challenged by overreliance on technology. The logic of grassroots organizing is an important structural framework within which many organizations operate. With the growth of civic technologies to improve the efficiency of governments and to facilitate community engagement in political process, it's easy to forget (or overlook) that grassroots community organizing was an early "innovation" employed by organizations to overcome systemic participation barriers. This was the case for DSNI, which emerged as a response to the perceived dehumanization and bureaucratization of traditional local government processes. The romanticized town hall-model of deliberative micro-politics was systematically out of reach of the constituents that DSNI came to serve, and community organizing became a means to engage and empower people (Medoff, 1999).

It is in this context that the Alinsky model of community organizing has become a popular strategy over the years, which implies building relationships one person at a time, rather than being reduced to data in the fashion of hyper-rational bureaucracies (Miller, 2009). The Alinsky model of organizing, for example, has very concrete structural outcomes: to engage the unengaged

with person-to-person methods, such as door-knocking, flyering, and home visits—in short, emphasis is placed on political participation in the terms and spaces of common people that are systemically and culturally excluded from formal politics. As such, the Alinsky model has gained popularity for engaging communities that fall through the cracks of formal electoral and deliberative politics, such as low-income people, immigrants, and communities of color (Ganz, 2002; Medoff, 1999). The grassroots has representational value—for the people with whom we spoke, the grassroots represented authentic relationships with constituents, even if it didn't always create them.

In this sense, the grassroots has traditionally represented the antithesis of state politics, largely because governments cannot easily replicate it as it is difficult to scale and relies heavily on unpaid work. At the same time, there are numerous examples that show the blurring of CBOs and government in this regard (Kreiss, 2012; Stein, 1986). But, in many civic organizations, the tension is not only between the small organization and the government or corporation, but between the small organization and social media technologies. Especially as technologies aid the professionalization and commodification of the grassroots (sometimes referred to as "astroturfing"), organizations are more actively policing the lines between authentic and inauthentic community engagement (Walker, 2014). For organizations framing their intervention with grassroots organizing methods, such as DSNI in our case, civic tech holds promise for their work, but not outside of real fears that technology may reproduce the alienation and bureaucratization that led to the rise of community organizing in the first place.

While civic tech in government is often characterized through the lens of new practice and liberation from constrained bureaucracies, the way these same technologies play out within civic organizations is importantly distinct; in fact, they are in opposition to the technological efficiency espoused by most government tech projects (Gordon & Walter, 2016). Structuration takes place between the logics of the organization and the ICT; but additionally, the logic of grassroots organizing, as a horizontal model for facilitating political participation and community empowerment, impacts how technologies are considered, adopted and implemented.

Examples of this include the metaphors of paper, doors and boots. According to an organizer at DSNI: "We use A LOT of paper, like one-on-one communication that happens when you're flyering, so we use a lot of the flyers when we door knock" (DSNI8). When asked specifically about social media approaches to organizing, another person acknowledged the importance of digital tools but then quickly reverted to the primacy of paper: "A lot of it is also creating flyers and going door to door, I do a lot of door work....I'm boots on the ground, it's kind of my style of organizing....I drop off flyers in peoples' mailboxes and let them know about upcoming community meetings (DSNI7). The grassroots is a structure

of meaning that organizers bring to any decision about applying ICTs to their work and conversely, they apply the representation of ICTs to their “traditional” organizing practices, often as a way of justifying the intensity and intimacy of the approach. For example, in defending the face-to-face, one DSNI organizer said: “[Online] I think people can tend to be less focused, if they are somewhere else and there is a lot that is going on, as opposed to like, being in a room and having to work on something all together” (DSNI8). And another summed it up this way: “In general [we focus on] keeping it to the traditional, like, grassroots organizing tools of going out and having one-on-one conversations” (DSNI7).

As a strategy, there is nothing surprising about organizations using techniques of door-knocking and flyering. What is surprising is the extent to which organizations use physical metaphors to constitute their identities. The theme of handing people flyers or postcards and transforming that moment of information exchange into a moment of human connection, was rather prominent and defined in opposition to texting or social media exchanges, wherein the scale might be larger, but the intimacy lost. “The biggest danger and challenge is that we don’t have face-to-face conversations with people” (DSNI2). With DSNI in particular, an organization with decades of history with the community it serves, technology is certainly embraced, but only as an addition to paper:

Technology is not an end in itself. It’s a great tool. It’s not a substitute for old-fashioned community organizing. You can’t just say well, I emailed a thousand people and I don’t know why they didn’t come to the meeting. You’ve got to still do the work but I think in terms of more of an interactive two-way tool it opened a lot of eyes about how we could engage residents in meaningful conversations. (DSNI4)

Most community organizations continue to define themselves through paper-based relationships (Ohmer & Beck, 2006; Speer & Han, 2018), and technology is carefully characterized in dialogue with that authenticity.

“It’s a huge concern of anybody who does community organizing,” said a staff member at DSNI, “will we get everybody’s input via technology, and who does that leave out” (DSNI2). But in addition to fears of missing individuals, ICTs are generally perceived as compromising the integrity of relationships between individuals: “Through the computer you don’t have that person to person trust and bonding that can develop when you’re building relationships or that need to develop as you’re building...There’s not that personal connection.” (DSNI8)

3.4. Youth vs. Adults

The structuration of technologically mediated grassroots plays out along generational lines. The efficacy of civic tech is most often connected to youth, both in terms of

functional strategies of reaching a youth population, and also in terms of representational strategies of appearing to appeal to youth. In every single one of our interviews, ICTs were at some point connected to the habits of young people. Most organizations have done informal surveys or observations to better understand the behaviors of young people in their communities. According to a youth organizer at DSNI:

Talking from a youth perspective, the young people are definitely...“text me. Don’t call me. I’m not going to answer my phone. Send me an email. Maybe I’ll look at it”....Then there’s a whole other group of young people who didn’t even know how to address envelopes, because it’s not at all in the realm of what they do. They’re, “Just send me an email”, and we’re, “We’re just trying to send you a care package, and goodies, and....” We find, now, that’s much more of the way that they respond to us, and “do a doodle, and don’t send me a bunch of dates, just let me click what I want, and see what everybody else said, and go about my merry way.” (DSNI2)

There is an understanding of how youth communicate and there is a recognition that the organization needs to respond to those communication patterns. DSNI is very good at tapping into the tech savvy of youth—understanding that youth tend to have large online social networks and can help with getting the word out about events and projects:

The youth help us, from time to time, so we have played around with whether to do a Vine, all of those different things, because they’re just using them, and so in the course of having them help us to organize, we’re asking them, “How do you get the word out about something?” They’re utilizing these tools, and we’re not, so that’s definitely some of where we get our ideas. (DSNI2)

However, as discussed above, these strategies are in direct opposition to paper-based authenticity, which remains an important representation of the organization. Often what happens is that youth communication is seen as a process that is carefully distinguished from the organization’s identity. In other words, tech-enabled youth relationships are seen as aiding in engaging adults, in service to the structural value of authentic relationships, but not as ends in themselves. Someone from DSNI expressed this tension through a desire to see youth, adults, technology, and paper clearly integrated:

Maybe we could integrate technology and door knocking. The youth, when they went out to get feedback from parents about education, they brought their iPads. They had the parents filling out a survey while they were talking to them, so that was cool, they could just ask them questions and then they would plug it

into their iPads and in the end they had graphs and stuff that summarized the feedback. (DSNI8)

In this example, technology-equipped youth are a vehicle to engage non-technology equipped adults. It accomplishes a very specific task of gathering information (which of course could have been done on paper), but also embodies a forward-thinking approach through the representation of the iPad. This example points to a strategy that seeks not to compromise the authenticity of paper, while at the same time producing a powerful symbol (young person canvassing with iPad) for the organization.

In general, organizations are not seeking new practice through ICTs, but instead seeking to complement existing practice with civic tech tools. This is not surprising, since technological change often does not occur as disruptively as commonly represented. But what was surprising in our research was the consistency in which organizations cycled through a process of considering and adopting ICTs. After the representational tensions surrounding the grassroots and the digital were reconciled, only then did the discourse move to understanding the functional potential of the tool. The iPad example is illustrative of this sequencing, notoriously adopted by organizations (especially in the education sector) because of what it represents rather than what it does (deAbreu, 2015). Organizations sometimes claim to be innovative simply because they purchased 50 iPads. The technology itself becomes a means of capturing youth—"youth will take us more seriously if we give them iPads"—and in turn, youth come to represent authenticity—"if youth are engaged, then we are 'keeping it real.'" This circular reasoning has become quite prevalent in organizational culture, and it is important that effort is made in disentangling representation from the thing it represents.

4. Conclusions

The four tensions described in this study are overlapping and in some cases contradictory. When it comes to the grassroots, technology can be seen as inauthentic. But, as a means of capturing youth in a process, technology can facilitate the appearance of authenticity. This research has highlighted the complexity of the integration of technologies into the work of CBOs, specifically the challenges associated with humans delegating their "public work" to non-human actors. The issues go well beyond an organization's capacity to access and support technology; CBO staff are daily confronting the meanings associated with technologies as they make decisions to adopt and integrate them into organizational practice. The functional concerns of civic technologies (the way in which they address problems such as lack of efficiency) need to be understood in combination with the representational concerns (the way in which they represent change, innovation, inauthenticity and youth). As organizations struggle to fulfill their missions, they are confronted with the pressures of all that technology repre-

sents. These pressures are sometimes aligned with missions (youth and innovation, for example), and sometimes directly pushing up against hard fought grassroots identities. They provide a lens through which to see the field of civic tech, where the logics of grassroots organizing push up against the logics of tech-centered innovation and scalability. The tensions between face-to-face and mediated practices are richly textured and should not be seen as a simple binary or mistaken for technophobia or resistance to change. Community organizing is a structured system within which many civic organizations operate, and the invention, adoption and deployment of civic tech, exists within that context.

Our research points to a need to consider the practices of technology use and not just the outcomes of technologies. There is considerable unevenness in the types of organizations using civic tech, which has impact not only on the practicalities of implementation, but as we have demonstrated, in the values assigned to the work that tools do. It is important to understand the distinction between function and representation and then understand how each is put into practice. Our research has looked specifically at the challenges practitioners face when delegating tasks to non-human actors and the associated meanings that come along with that delegation. We have provided insight into this process by focusing on four tensions that are top of mind as practitioners incorporate technology into their public work. These include: function vs. representation, amplification vs. transformation, grassroots vs. grasstops, and youth vs. adults.

There were, however, limitations to this study. First, we focused only on US-based organizations. There is no doubt that if we were to look at other national contexts our findings would be different. However, we hope that this article can provide a productive foundation for future research. Additionally, we spent considerable time embedded within a single US organization. Our interactions with the other 14 organizations was minimal. We conducted interviews with various organizational leaders, but didn't have the opportunity to embed within them, therefore our insights into these organizations are limited to what people reported. Our initial insights were gained primarily through an ethnography with a single organization, and then verified through our conversations with a range of other organizations. Ideally, we could have expanded our ethnographic methods to other organizations, but we lacked the resources to do so. With that said, we have confidence that our findings can productively contribute to future research.

Considering the complexity of technology adoption, including the internal and external demands on practitioners to adopt new tools and processes, can provide context for future work that looks at the effectiveness of such tools and processes. Future work in the area of civic tech, specifically as it pertains to CBOs, should consider the complexity of implementation and adoption as it seeks to evaluate impact.

Acknowledgments

We would like to thank the John S. and James L. Knight Foundation for their generous support of this research.

Conflict of Interests

The authors declare no conflict of interests.

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Article

“This Is Shared Work:” Negotiating Boundaries in a Social Service Intermediary Organization

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Submitted: 1 April 2019 | Accepted: 15 May 2019 | Published: 6 August 2019

Abstract

This article discusses the results from our fieldwork at a social service intermediary organization working to reform criminal justice institutions in a large city in the American South. Our findings focus on organizational staff’s relationships with information and communication technologies (ICTs), both in the course of their daily work of delivering care work to vulnerable participants, as well as the project’s broader political goals to reduce recidivism and repair community relationships with local police. The group needed to distinguish and negotiate the various—and often competing—needs and commitments of the civic actors involved. As on-site researchers, we were asked to design and deploy digital tools to support the organization in exchange for conducting research on organizational uses of technology. This work draws from our time with the group to ask: *how might community-based researchers revisit and realign our research methods to better respond to the changing needs and practices of a research site?* Our observations identified three recurring technological concerns expressed by staff that pointed to competing agendas and needs within the organization, specifically across different levels of scale: operational, proximal, and temporal. We then discuss these patterns around broader organizational concerns to reflect on how they impacted our own research methods and commitments. Finally, we reflect on the limitations of participatory methods in issue-oriented organizations that do progressive work across multiple scales and agendas.

Keywords

civic engagement; community-based research; public sector; social service, social work

Issue

This article is part of the issue “Civic Organizations and Digital Technologies in an Age of Distrust”, edited by Eric Gordon (Emerson College, USA).

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1. Introduction

Community-based research is messy and difficult. It asks researchers to wear many hats simultaneously. This is especially true of public sector work in the United States where researchers must navigate limited or inconsistent resources (Goecks, Volda, Volda, & Mynatt, 2008; Merkel et al., 2007), volunteer or untrained staff (McPhail, Costantino, Bruckmann, Barclay, & Clement, 1998; Merkel et al., 2004), and uncertainties around the stability or sustainability of the community (Håkansson & Sengers, 2014; Le Dantec & Edwards, 2008). Recent literature has paid closer attention to the sociopoliti-

cal conditions under which public sector work occurs as historical, cultural, and/or economic factors influence how community-based research is conducted, such as who does what work, which tools enable that work, how work is done, and to what end (Asad & Le Dantec, 2015; Erete, Ryou, Smith, Fassett, & Duda, 2016; Stoll, Edwards, & Mynatt, 2010). Questions of access, power, and participation are certainly ongoing negotiations within the community itself, but additionally become entangled with and framed by macro-level institutions and structures, such as systemic oppression (Dimond, Dye, Larose, & Bruckman, 2013; Wyche & Grinter, 2012), regional politics (Alsheikh, Rode, & Lindley, 2011; Asad

et al., 2017), and geospatial density (Boehner & DiSalvo, 2016; Dombrowski, Brubaker, Hirano, Mazmanian, & Hayes, 2013).

Growing trends in the public sector point to the work of public, private, and municipal actors become more entangled to combine increasingly scarce resources to issues of public concern (Dombrowski et al., 2013; Erete et al., 2016). As boundaries blur within public sector work, scholarship shows this introduces additional challenges as communities must contend with competing agendas and efforts (DiSalvo, Lukens, Lodato, Jenkins, & Kim, 2014; Volda, Dombrowski, Hayes, & Mazmanian, 2014), funding sources and requirements (Goecks et al., 2008), and differing expectations around labor and management (Harmon, Bopp, & Volda, 2017; Volda et al., 2014). When information and communication technologies (ICTs) are deployed to support this intermediary work, they are woven into the intricate fabric of human and non-human actors that all participate in and negotiate the various politics, ethics, and power struggles involved in community efforts around different issues.

As community-based researchers, we too are part of this fabric and our research efforts necessarily about the socio-technical networks we purport to study (Lodato & DiSalvo, 2018). This article focuses its analysis on community-based research efforts that use more interventionist design methods, such as participatory design (Björgvinsson, Ehn, & Hillgren, 2010) or action research (Hayes, 2011). Our interests lie in the boundaries between researcher and fieldsite and how these boundaries are established and negotiated through the design and deployment of ICTs. Specifically, we ask *how community-based researchers might revisit and realign our research methods to better respond to the changing needs and practices of a research site?* Our role as in-house technical support and organizational consultants provided unique insight into how the staff enacted their various responsibilities and the myriad ways that digital tools were expected to support their work. In order to push for social change in the complex and interwoven criminal justice ecosystem of an urban city in the American South, the organization had to necessarily bridge the agendas, ideologies, and needs of involved actors, including vulnerable participants, local residents, police officers, social service agencies, legal actors, and both incoming and outgoing political representatives. We hope to contribute to growing conversations in the academy around how and when to intervene through research, especially when working in complex public contexts.

2. Designing Social Change

2.1. Intermediary Work: From Grassroots to Institutions

We draw from and build on existing bodies of work that study intermediary organizations in public sector work. More traditional intermediary work in these environ-

ments connect disparate resources or organizations to build greater capacity for action (Asad & Le Dantec, 2015; Parker et al., 2012). More recent research in this space focuses on various strategies and common practices used across organizations (Hansen, Koepfler, Jaeger, Bertot, & Viselli, 2014; Lodato & DiSalvo, 2018), which often include myriad actors, from city and municipal employees to volunteer activists and institutional actors. These works reveal common technological challenges across the political spectrum of public work, such as outdated computers or incomplete datasets. Scholarship points to the ways in which intermediary work does not strictly address technological concerns, but looks at how ICTs mediate and participate in larger and more complex social issues, from economic security (Vyas & Dillahunt, 2017) to cultural identities (Wyche & Grinter, 2012) to urban crime (Erete et al., 2016). A common challenge specific to intermediary organizations is the ways in which competing and often contradictory values and agendas must co-exist and the work must be malleable enough to address these complexities (Le Dantec & Edwards, 2008; Stoll et al., 2010). As Volda et al. (2014) argue, it is difficult enough to put into values into practice when everyone in an organization shares those same commitments, much less when a project spans different categories of civic actors, each of whom have their own set of values, commitments, and responsibilities, which the organizational staff must contend with through their work.

Recent work has paid closer attention to the ways in which non-human actors also participate in and facilitate intermediary work with sensors, processors, and data exerting as much agency as human actors to address social issues (Forlano, 2016; Harmon et al., 2017). Here, we use “intermediary” in a different sense to focus on role of ICTs in public sector work. Literature discusses how sensors and data are influential actors in citizen sensing projects (Erete et al., 2016) and social media platforms operate in tandem with neighbors and residents to negotiate shared concerns around local, small-scale community engagement (Asad & Le Dantec, 2015; Hansen et al., 2014). Another important perspective to consider is self-reflexive: our participation as researchers is also a kind of intermediary work as we exert influence over research sites regardless of our methodology (Holmer, DiSalvo, Sengers, & Lodato, 2015; Khovanskaya, Sengers, Mazmanian, & Darrah, 2017).

2.2. Interventionist Work: On Friction and Research

The researcher-as-intermediary is not a new concern to community-based research: more interventionist methods have actively incorporated this positioning into its modes of inquiry, such as participatory design (Björgvinsson et al., 2010; Holmer et al., 2015) action research (Hayes, 2011), and more design-based methods like service design (Stickdorn, 2011) and design ethnography (Khovanskaya et al., 2017). These different traditions call for varying degrees of intervention with a re-

search community and aim for different outcomes from the work. Recent literature suggests a move towards deeper and more involved interventions. Some call for more rigorous interrogations of oppressive sociopolitical institutions that touch our fieldsites (Dimond et al., 2013; Le Dantec & Edwards, 2008) while others ask us to incorporate more socially just and ethical approaches to our research (Dombrowski, Harmon, & Fox, 2016; Fox et al., 2016). Korn and Volda (2015) present a framework to look at the spectrum of interventions possible through research and join other researchers in active calls for facilitating more “friction,” or agonism, through our various methods, be they ethnographic, design-based, or quantitative (Korn & Volda, 2015). It is also important to interrogate the specific site of friction: in some cases, the more ethical choice may be to use research to maintain existing practices to resist friction, like in instances where said friction hinders just or ethical outcomes (e.g., policies that makes it more difficult for participants to receive social services) (Håkansson & Sengers, 2014; Khovanskaya et al., 2017).

Across these different scales and strategies, it is imperative to be introspective and interrogate what forms of power and oppression exist within our research sites and how our participation may impact these power dynamics, intentionally or otherwise (Dombrowski et al., 2016). Below, we detail the history of the fieldsite to highlight the ways in which its work is both intermediary and interventionist, and brings to the surface different motivations, agendas, and concerns.

3. Site and Methods

3.1. Site

The lead author conducted ethnographic fieldwork with a criminal justice organization in a major city in the American South whose goal was to ‘divert’ vulnerable populations to social services instead of arresting them. These populations were vulnerable people who are homeless and/or facing extreme poverty, struggling with substance abuse, and/or experiencing mental health issues. As a result, they couldn’t be reached by more traditional social service programming, and were thus more susceptible to repeated interactions with law enforcement. The organization was created to address these systemic breakdowns and was the result of multiple years of grassroots campaigns and policy work. These campaigns were originally led by a sex workers advocacy group who worked with local police over years to establish non-punitive ordinances in areas known for high sex worker activity. The campaign eventually grew to include other survival/quality of life crimes, e.g., loitering, panhandling, or possession of forbidden substances, and eventually led to the formal creation of the organization.

The organization itself is an intermediary between a wealth of affected actors, including police officers, attorneys, judges, community-based organizations, activists,

advocates, policymakers, social workers, and the organization’s program participants, who were often in extreme poverty and dealing with mental health and/or substance abuse concerns. The organization’s main work focused on ‘diversions,’ which are the mechanisms by which trained police officers choose to offer social services to a participant instead of arresting them. Once participants have consented to enter the program, they directly interface with the organization’s social workers who connect participants to social service providers who have been vetted to be respectful of participant’s life experiences, including trauma-informed social services, non-punitive program requirements (i.e., re-arrests or relapses will not put participants at risk of ‘getting kicked out’ the program), and working with trans-inclusive and non-religious partners. The organization also mediates relationships between the participant and various program partners (e.g., social service providers, legal advocates, participants’ attorneys).

During our 8-month tenure with the organization, they were operating as a pilot program, which meant that there was immense pressure—both within the organization and from program partners—to show the efficacy of the program and its goals in order to secure additional funding and establish the pilot as official city programming. Given their focus on criminal justice reform, part of the challenge of the work was to capture successes in ways that were legible to bureaucrats and policymakers unfamiliar with the complexities of social work, much less as the unique demands of social work in this region of the country. While the complex sociopolitical context of the American South is beyond the scope of the article, we wish to acknowledge the fraught regional politics that have not historically supported social welfare and educational programs, leading to heavy racial segregation in the city, historical and institutionalized anti-Blackness (e.g., redlining), and the criminalization of Black communities. As a result, there are fraught relationships between many neighborhoods and criminal justice actors (e.g., police officers), as well as the state (e.g., service providers), which was particularly true of the geographic region where the pilot was being tested. The program formally launched (i.e., started diversions) in October 2017 and is open for diversions 4 days a week (typically late-to-overnight shifts when many quality of life crimes occur). As of the time of writing, there are 70 participants in the program.

3.2. Methods

The lead author conducted fieldwork with this organization for approximately eight months, from August 2017 to March 2018, spending an average of 6–20 hours a week in the office. She documented her observations through extensive field notes. Together with the second author, we analyzed our notes based on the fundamentals of qualitative data analysis (Miles & Huberman, 1994; Stoecker, 2012; Van Maanen, 2011), using induc-

tive codes to analyze notes and iterate on our codes to organize our findings below.

The lead author's observations were based on her time with staff at the organizational office. At the start of her fieldwork, the organization had 6 full-time staff members: the executive director, the social work manager, two social workers, an operations manager, and an administrative assistant. The group experienced some flux, including firing two employees, hiring two part-time social workers, replacing a full-time social worker, and replacing the operations manager. Given the pressures of the pilot phase, the lead author completed tasks to support the operational needs of the organization, especially during staff shortages, which mainly included administrative tasks (e.g., answering phones, taking notes, ordering office supplies), logistics (e.g., directing partners to the office, coordinating deliveries) and supporting individual staff members with technological problems or emotional support.

It is important to make clear that we did not conduct any fieldwork with the field site's participants and only had minimal interaction with them as they occasionally visited the office to meet with the care staff. These interactions were limited to checking in (e.g., greeting them, showing them the wait area, letting care staff know they were present). Additionally, we did not study the diversions themselves, but rather the norms, expectations and practices of the organizational staff, as well as their daily information practices. These data practices varied, ranging from hybrid handwritten and typed forms and documents to using various digital channels to contact participants and partners to using social media to coordinate trainings and events. Staff were expected to complete a number of tasks daily, including documenting their progress, updating procedural and institutional protocols, and generating organizational reports, like meeting minutes, professional updates, and social work case notes. These tasks spanned a variety of digital tools, including but not limited to shared drives on the local area network, project management platforms, office suite software, and apps to access different databases and resources.

The lead author was given access to some of these data via the organizational shared drive, though permissions were set such that she could not access private or personal information (e.g., hiring documents, participant medical files). Broadly, she had access to the organization's meetings, events, and daily work practices, as well as direct access to the staff members themselves while they were in the office. The lead author was primarily consulted on technological questions and concerns (e.g., installing the correct drivers), she was also invited to participate in broader organizational decision-making processes and took on non-technological responsibilities. She attended staff and partner meetings, created internal documentation (e.g., inventory, communications plans), and developed digital and non-digital prototypes to deploy on-site. Some of the prototypes were longer

term projects, such as the participant/partner database described in Section 4.2, which would be regularly used by social work staff and occasionally by external partners. Other prototypes were more focused on management or organizational practices, such as designing forms and templates.

The labor described above was offered at the onset of the fieldwork and accepted with the full consent of the staff (the lead author also explained her role as an embedded researcher to each new staff member as they joined the organization before asking their consent to observe and assist them). When we were initially invited to the organization to design and implement various digital tools, both the lead author and the staff members agreed that the researcher would also help support organizational stability and growth on a day-to-day basis as needed. These efforts were extended in the spirit of *action research*, an approach to community-based research in the discipline of human-computer interaction that "satisfies both the need for scientific rigor and promotion of sustainable social change" (Hayes, 2011). Practicing action research is to prioritize the needs of community partners, which in this case asked the lead author to deploy her skills with project management and IT to provide *ad hoc* administrative support and technology training as needed, which also provided the opportunity for her to engage in the research inquiries and interventions described above, which she did *alongside* the staff, rather than dictated or prescribed to them.

4. Findings

Below we share the lead author's observations on interactions between organizational staff and various digital artifacts in the office, both in the course of their daily work and also as situated within the broader goals of the pilot project. We outline three categories where expressions of conventional technological concerns (e.g., usability, security, privacy) reflected broader tensions in the group. These tensions spanned three levels of scale: *operational scale*, referring to concerns that were more urgent for the day-to-day operations of the group; *proximal scale*, concerns impacting the core staff members working in the office vs. other, more distant stakeholders; and *temporal scale*, negotiating actions to be taken in the more immediate present vs. in the future.

4.1. Operational Scale

At the start of our fieldwork, the executive director asked us to create digital systems to support operational work within the organization. These data were to be used to support both participant needs of the smaller scale, day-to-day social work, as well as the larger scale work of policy change and criminal justice reform. While some tasks could be completed by organizational staff alone, others needed input from partners and thus required more coordination, like contacting service providers to

check the availability of resources or checking various court dates with different attorneys. We worked with staff to learn about their work practices and to arrive at consensus on which digital artifacts would best serve the group's needs, which revealed competing agendas for how these operational concerns should be addressed. Specifically, there were tensions between improving the existing, *ad hoc* assemblage of myriad digital artifacts or creating two customized digital *infrastructures* to streamline both internal and external tasks. Given the urgent nature of the work, these technical questions became a way to negotiate how to prioritize what kind of work got done: more administrative tasks or more diversions.

The existing digital tools were cobbled together by staff members based on their existing skillsets and familiarity with digital tools, though by their own admission was risky as participant information was being shared across multiple channels, such as email, text, and verbally over the phone. These practices were more reactive as they were typically addressing the urgent needs of participants. Alternatively, while the new digital systems would be more secure, they would be costly in other ways, such as costing money for additional resources. The new systems would require additional labor from staff for systems training and maintenance, whereas they were currently focusing their already constrained efforts on diversions. One instance of these operational tensions took place during a staff meeting to prepare for an upcoming partners meeting. Here, a social worker asked the team for advance for how to communicate the nuances of a roleplay scenario:

SW: I don't want to go up there and say the wrong thing. Should I say (it this way)?

Executive Director (ED): Well...

SW: What about (a different way)?

(silence)

ED: This is shared work, we're not going to let you fail.

SW: Okay, but what should I say?

When consulting the social worker after the meeting, she expressed frustration at the executive director being "not helpful" when she needed advice. She identified a disconnect between her ask for effective communication during a meeting and her receiving what she thought were irrelevant reminders of the organization's core principles of cooperation and consensus. Here we see how the tension between the material needs of the day-to-day and the 'big picture' can be malleable and contested in light of different operational priorities and practices.

4.2. Proximal Scale

The executive director eventually solicited the lead author to customize an existing product, Salesforce, as an all-encompassing system to coordinate both internal and external tasks. From this, we observed another set of tensions along the scale of *proximity*: while the decision

to use Salesforce was justified as a compromise for the concerns described above, it introduced some ambiguity around who the tool was supposed to serve. Combining both internal and external tasks in a single artifact was meant to better facilitate staff members continuing their daily work with minimal training and IT setup. However, the artifact was also meant to be accessible by partners, such as attorneys and services providers, which introduced concerns about who the system should be built for—internal staff or external stakeholders.

In one meeting, team members discussed which specific technical features should be incorporated into the system. Specifically, the social work manager asked for text field input for one section of the new system so social workers could qualitatively describe the participants' goals in detail. She explained that she had seen participants in other organizations receive "overly prescriptive care" and she wanted to keep the focus on the participants' self-determined progress and self-reported experiences. She emphasized the importance of recording the quality of each participant's interaction with a social service provider, saying that how participants *felt* about delivered services were crucial to their wellbeing, as well. She told us about transphobic agencies she had previously worked with who delivered services to cis-gender participants, but trans participants reported completely different, traumatic and harmful experiences. By contrast, the executive director wanted to deploy predetermined sets of checkboxes and dropdown menus to facilitate the speed of data entry and to make data easier to interpret for external stakeholders. Here, the dissent over data entry formats reveals differing expectations for who would be the primary users for the digital system.

We observed how these technical discussions echoed this same proximal tension in other, non-technical conversation: for example, in staff meetings, care workers in the group often described their approach as using "radical love" to "heal" people, stating reminders to "(diversion) calls (from participants) change everything." In the same meeting, the director described organizational success in very different terms, stating that "if they (the police department) feel like this is their program, we've done our job." Given the intermediary nature of the organization, we observed staff members often acknowledge the complex and nuance motivations driving the project, but it was these technological conversations that made material the different organizational missions and commitments.

4.3. Temporal Scale

The third tension we observed was concerned with temporality: decisions about different digital structures revealed difficulties in balancing more immediate concerns with needs that would impact the organization in the future, particularly beyond the pilot phase when it would need to scale up to become a more robust program. These tensions are not mutually exclusive: there were

concerns about temporality as mentioned in Section 4.1 as more administrative work was not directly addressing immediate concerns in the organization, i.e., prioritizing data maintenance instead of participant health and wellbeing. These temporal concerns also came up in discussions of specific technical needs for Salesforce: again, conversations around a single data field pointed to differences in what work was more important. In this example, a meeting was held to identify what health-related data should be captured for the Salesforce database to be shared with external partners. On a technical level, staff wanted to balance a generalizable data set so they could better anticipate if certain resources or kinds of care were needed versus collected data that would be unique to each participant's specific goals. As one staff member put it, one challenge with data collection would be to "be creative with how we track certain progress goals, like showering everyday."

This was a particularly important conversation to have as external partners needed to have access to certain kinds of participant data (e.g., demographics), but making accessible certain kinds of personal data might result in vulnerable participants facing discrimination, e.g., based on their sexuality or health status. In this meeting, there was contention over the inclusion of a checkbox to connote a participant's HIV status: by having this information available in the database, staff and service providers might be able to offer more appropriate care, but staff members were concerned for participants' dignity, at best having deeply personal data stored on corporate servers, and at worst, what were to happen to participants if there were to be a data breach. Staff discussed other kinds of data as being helpful in future work—for example, tracking instances of rearrests—but in this instance, the technical conversation reflected deeper concerns about present decisions that might open the door to different scales of impact in the future, specifically introducing more traumatic or irreparable kinds of harm to folks already experiencing multiple kinds of trauma.

5. Discussion

By the end of our fieldwork with the organization, the lead author ended up designing and building the Salesforce system solicited in Section 4.2, but she also adjusted her research practices to better reflect and respond to the tensions described in the above section. Ultimately, researchers and the organization mutually agreed to conclude our fieldwork as a *service design* collaboration rather than an action research project. As such, researchers provided prototypes, recommendations, best practices to the organization rather than engage in more collective and in-depth design processes to catalyze more impactful change within the organization. This decision was largely made because of concerns around *temporal scale*—fieldwork was taking longer than agreed upon but researchers had academic commit-

ments that had to take priority, like teaching. Below, we reflect on operational and proximal tensions common to community-based research—that is, what kind of work can we commit to and to whom are we responsible?—and discuss our responses to the different organizational needs we observed in light of our research commitments and priorities. We focus specifically on the kinds of interventions we tried to deploy as researchers, as well as the friction that was produced across different relationships in the research project.

5.1. From Social to Technical Prototyping

The organizational contradictions were helpful cues for us as researchers as they eventually became the boundaries our research collaborators drew around where we should and should not intervene on-site. The above contradictions can be seen as a kind of *social prototyping* (6) as the organization itself needed to figure out what their priorities were, in all their complexities. There is an extent to which the inconsistencies above are expected artifacts of a new organization still working through growing pains. Indeed, with early interventions from the lead researcher, the team iterated through kinds of practices to prototype within the organization what best worked for them, such as working through conflict as an entire team and in-person during staff meetings rather than through online communications.

By the end of the fieldwork, however, we decided as researchers to prioritize the completion of the technical artifact over building organizational capacity, and thus focused our efforts on different concerns around technical requirements. We did not feel like a focus on the technological was completely eschewing organizational concerns as the digital platforms served as shared artifacts between the site and the researchers through which broader concerns could be articulated and negotiated. Nascent organizational practices, concerns, and power dynamics were made material through discussions of the digital tool itself. As such, the lead author shifted her tactics: instead of facilitating dialogue and debate across team members and organizational practices, she facilitated conversations to focus on shared understandings (and misunderstandings) of the artifact. The digital tool was a way to articulate both technological needs and to give form to kinds of work that should or should not be done.

As mentioned above, we ultimately prioritized concerns of the *temporal scale*: because funding for the project was conditional, we had to adjust our research to the fact that there was more at stake than participants' wellbeing. These temporal concerns also directly impacted *operational* concerns: if efforts focused too much on the short-term (e.g., administrative tasks), the organization would not be able to sustain the diversion work to make claims about the longer-term goals (e.g., policy change, criminal justice reform), thus putting at risk the possibility of the project existing in the future.

It was through the lens of these operational concerns that the lead researcher was able to articulate changing boundaries to staff members: she would be able to make more lasting impact by taking a step back from administrative work and focusing on technological implementation as her time at the site was limited and there was more organizational capacity to complete administrative tasks as there was for deploying digital systems. It was important to hear and acknowledge each staff member's priorities—be it policy or care delivery—because even though we could not address each of them through research, they were ways for us to identify how our work and impact at the fieldsite could best support the broader organizational work.

5.2. Micro- and Macro-Level Friction

We were able to gain insight into the boundaries around our work as researchers by observing the different perspectives on technological requirements and organizational priorities. We saw boundaries drawn across the team of who does what kinds of work: whereas the social work staff focused on participants' needs and delivering care, the ED was able to frame this on-the-ground work to external stakeholders by translating how the micro-level work moved forward the macro-level policy goals. By the time we had transitioned our research methods to more of a service design model, the challenge was to focus our efforts on how to best contribute to the organization with our remaining time and capacities. Here, our concern was around *proximal* concerns: on whom should we focus our support? As described above, individual staff members had differing commitments to stakeholders on the project, whether it was supporting individual participant needs or translating these efforts to external partners to influence policy or culture change.

As described above, much of our early fieldwork was spent (to mixed levels of success) designing and implementing digital tools as a way to address problems that existed outside ICTs as well, such as lack of organization and clashing communication and management styles. There was no team management software that would address the power imbalances that belied the working relationships between the executive director and staff. This is not to reduce the agency of the rest of the team: we observed staff continually contest power relations within the office and they were not unaware of the institutional complexities of their work. Yet, in spite of this, the team did not seem to substantially push back against the hierarchical model imposed by the director, which posed a challenge to us as action researchers, who were invested in and make claims to distributions of power, specifically in the workplace and for those who are under-represented in decision-making processes.

In our observations of organizational practices, we observed how concerns across different levels of *proximal scale*—specifically the implicit pressure from city policymakers and the police force to lead a “success-

ful” criminal justice reform pilot—posed challenges to the micro-level work of the social work team. Taking the perspective of the staff, we could interpret their micro-disagreements over field inputs and dropdown menus to prioritize the wellbeing of their participants over the perceived success of the pilot by external parties. Despite the friction that it introduced to their day-to-day work, researchers observed how staff members negotiated boundaries within their group—‘picked their battles,’ so to speak—so they could focus their efforts on their participants.

We took our cues from the social work team adjusted our research methods at the fieldsite. Our challenge was to maintain our commitment to socially just research (Dombrowski et al., 2016) at a site that largely maintained status quo power relations. Rather than try and influence radical change within the organization—or even worse, influence change in the affiliate institutions, such as the police force—we instead did our best to align our efforts with and support the team's ongoing radical work of prioritizing their participants. Staff members took on additional administrative practices—such as maintaining shared calendars—so long as they did not interfere with their prioritizing participants (“calls change everything”). In turn, we acquiesced larger design decisions—such as building out a Salesforce database—and took seriously some of the more minute details as opportunities to better support the rest of the staff and their commitment to participant wellbeing. Over time, we learned to adapt our research methods to respect the complexities and contradictions of the site: we would not be able to co-design more collective organizational processes on the team, nor would we implement radical digital tools to challenge the larger scale, complex breakdowns of longstanding sociopolitical systems. We could, however, use text boxes in Salesforce instead of dropdown menus so that participants could share experiences with social workers and the social workers could, in turn, approach social service delivery with the dignity and respect they strive for.

6. Conclusion

Our fieldwork at a social service intermediary offered insight into the various challenges of doing work that is entangled in various public concerns, touches various stakeholders, and is responsible to different needs and project goals. The tensions of having to serve multiple agendas simultaneously—specifically across temporal, operational, and proximal scales—makes the staff's work even more complex and fraught. As researchers, we reflected on these organizational dynamics to try and develop strategies to build on and evolve our own work as intermediaries, particularly when our methodologies are interventionist by nature and added to the challenges our collaborators faced at the field site. By observing and respecting the various competing boundaries at the organization, we attempted to adjust our re-

search practices to better support the priorities of the staff and the goals of their work. We encourage our peers to center the concerns and priorities of their research participants in their research, which will be invaluable for articulating what kinds of work are or are not appropriate for that collaboration at that time. Moreover, we strongly suggest that researchers learn to value friction, rather than avoid it: while it may be a source of discomfort at first, that friction is ultimately fruitful for participants to articulate what is important to them, for us to build more trusting and sustainable collaborative relationships, and so we can orient our research to be richer, better informed, and more impactful. We hope this work will provoke conversation and reflection across other researchers, academics, and designers who seek to use participatory methods with issue-oriented communities or organizations.

Acknowledgments

We are grateful to the NSF for generously funding this work (1659757). We'd also like to thank our research participants for their patience and trust throughout our collaboration, without which this work would not be possible.

Conflict of Interests

The authors declare no conflict of interests.

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Article

Citizen Journalism and Public Participation in the Era of New Media in Indonesia: From Street to Tweet

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Submitted: 16 March 2019 | Accepted: 12 June 2019 | Published: 6 August 2019

Abstract

Citizen journalism was initially practiced via mass media. This is because citizens trusted mass media as an independent information channel, and social media like Twitter was unavailable. Following mass media's affiliation to political parties and the rise of social media, citizens began using Twitter for delivering news or information. We dub this as citizen journalism from street to tweet. This study found that such process indicates the waning of mass media and the intensification of social media. Yet, the process neither strengthened citizen journalism nor increased public participation as it resulted in netizens experiencing severe polarization between groups critical and in support of the government instead. We consider this as a new emerging phenomenon caused by the advent of new media in the post-truth era. In this context, post-truth refers to social and political conditions wherein citizens no longer respect the truth due to political polarization, fake-news-producing journalist, hate-mongering citizen journalism, and unregulated social media activities. Primary data were obtained through in-depth interviews with four informants. While conversation data of netizens on Twitter were acquired from a Twitter conversation reader operated by DEA (Drone Emprit Academic), a big data system capable of capturing and analyzing netizen's conversations, particularly on Twitter in real time. This study may have implications on the shift of citizen journalism due to its presence in the era of new media. The most salient feature in this new period is the obscurity of news, information, and opinions conveyed by citizens via social media, like Twitter.

Keywords

citizen journalism; Indonesia; mass media; new media; public participation; social media; Twitter

Issue

This article is part of the issue "Civic Organizations and Digital Technologies in an Age of Distrust", edited by Eric Gordon (Emerson College, USA).

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1. Introduction

There are two issues discussed in this article. The first is citizen journalism, while the second is mass media politics in Indonesia. Both relations are placed within the context of the advent of new media, specifically Twitter, and public participation. According to Lang (2010), citizen journalism may be construed as a form of journalism produced by nonprofessionals. Citizen journalism prod-

ucts may take the form of texts, images, videos, and audios. The production process may involve tools like mobile phones, computers, audio recorders, or even mere pen and paper. Historically speaking, Flew (2014) explains that citizen journalism emerged in 1999 following a publication by Matthew Arnison and others involved in a group known as 'Active Sydney'. This group began receiving numerous information from various sources for various new forms of news production.

Then in 2000, a website called *OhmyNews.com* popped up in Korea. This site was initiated by a former journalist, Oh Yeon-Ho, who was dissatisfied with traditional mass media reporting. He argues that journalists are not an exotic species. They are people who possess news and share it with others. This is why the motto of *Ohmynews.com* is “Every Citizen is a Reporter”. In its early development, *OhmyNews.com* began its activities by using 727 citizen reporters and 4 editors. After 5 years, the amount increased to 38,000 citizen reporters and around a dozen editors (Kolodzy, 2007).

The emergence of *Ohmynews.com* as a form of citizen journalism did not only take place in Korea but the whole world. Various literature suggests that early 2000 is recorded as a start in the rise of what is known as *indymedia* (see Lessig, 2001). There were at least 80 kinds of indymedia practicing citizen journalism. The emergence of indymedia at the time was driven by the political backdrop of creating space for citizens in expressing their concerns and showing their interests on various global and local public issues. Indymedia, which came about as a form of citizen journalism via website, was more feasible for citizens on account of the internet’s capacity to organize and keep archive of news, which traditional media is incapable of (Pavlik, 2001), and the extraordinary ability to interact among internet users (Schultz, 2000). Since it is based in freedom of expression and citizen interest, the advent of indymedia had resulted in various forms of communities (Ball-Rokeach & Gutierrez-Hoyt, 2001). The communities emerging from the internet-based Indymedia power had the potential to surpass the power of traditional media (Chadka & Kavoori, 2000; Kerr, 2001). Nevertheless, in the Indonesian context, citizen journalism did not begin from citizens’ activities on the internet. Citizen journalism first appeared from the news report of Elshinta Radio, Jakarta, which is a traditional media (Kurniawan, 2007; Kurniawan & Loo, 2007; Sukartik, 2016; Widodo, 2010).

The second issue refers to mass media politics in Indonesia. The most emerging debate within this topic concerns with the question of whether mass media affects politics, or politics affect media, or do both mutually influence each other. Normatively speaking in the political perspective, mass media functions as an instrument of control in state administration (Curran, 2007). This perspective believes that independent media can contribute to the democratic process by providing access to information that the public needs or by offering freedom of expression to citizens (Low, 2003). In short, mass media serves as watchdog to the state. While to the public, it functions as an information provider and arena for expressing public opinions.

However, mass media in Indonesia today no longer takes on both roles properly. This is on account of media ownership being under the control of conglomerate practices (Lim, 2011; Nainggolan, 2017; Nugroho, Putri, & Laksmi, 2012; Nugroho, Siregar, & Laksmi, 2012; Syahputra, 2013). Concurrently, media conglomerates

also assume positions as political party leaders. Mietzner (2015) considers this as a period of decline for Indonesian democracy. Meanwhile, Syahputra (2013) refers to this as the media regime. Media ownership by conglomerates who founded political parties and became its leader have resulted in their exploiting the media for political interests rather than keeping its function as state watchdog or arena for forming public opinions (Lim, 2012). The conglomerates wield extraordinary power as they simultaneously control mass media and political party (Castells, 2009). As a result, the media becomes partisan and the public has no outlet for conveying their opinions.

Such conditions have become more pronounced during periods leading up to general elections such as the 2014 or 2019 presidential elections. Approaching the 2019 Presidential Election, medias owned by political parties are dragged into becoming partisans, which consequently skews the media’s ideal reality. However, the rise of social media became an alternative for citizens to reinstate their function of public control over the administration of state. Additionally, netizens’ activities on social media even perform control over the operation of mass media. Social media has become a discursive space capable of inciting political mobilizations and mass protests. In Indonesia, intense social media activities could even impact social movement and induce political change (Lim, 2014; Nugroho & Syarif, 2012).

This is the most recent portrait of relations between the public, the media, and the state in Indonesia. A condition wherein the public distrusts mass media due to its political partisanship. Meanwhile, rising public participation and activities are found on social media. In this context, public participation is mediated through their activities on social media, since mass media is considered to have neglected its function as the state’s watchdog. Public participation is, hence, of utmost importance in the new media era within the context of social and political lives in a country like Indonesia. Public participation may be defined as “the process by which public concerns, needs, and values are incorporated into governmental and corporate decision making. It is two-way communication and interaction, with the overall goal of better decisions that are supported by the public” (Creighton, 2005, p. 7).

The above definition explains that public participation is neither coincidental nor unintentional. Public participation is not only the process of involving the public in providing the information they need. It is a process of interactions among citizens, or between citizens and state administrators or various private institutions. According to Keeter (2003), public participation is indicated by the following: (1) the participation concerns public issues and solutions; (2) public participation is voluntary; (3) the public is citizens, or members of a group or organization.

These various conditions are new phenomenon concerning the relationship between public participation and citizen journalism. It’s a rather complicated relationship to simplify as it involves various well-established un-

derstandings and factors. For instance, citizen journalism is not as simple as Lang (2010) mentioned, because the forms of journalism produced by non-professionals are no longer simple. The products of citizen journalism in the form of texts, pictures, videos, and audios are made using tools like cell phones, computers, audio recorders, or even plain pen and paper then distributed via conventional (traditional) mass media.

In the context of Indonesia today, the process appears with various complex specifications due to the presence of social media with rather high level of netizen activities and mass media politically affiliated to presidential candidates running for the presidential election. As a result, polarization based on differing political orientation in the presidential election emerged among the netizens. This consequently led to the citizen journalism process being formed by various political orientations from the polarized netizens. The polarization places mass media as one of the partisan actors. Thus, the advent of citizen journalism politically is a manifestation of their participation in civic life. In such context, the concept of public participation also changes, and it is no longer "the process by which public concerns, needs, and values are incorporated into governmental and corporate decision making. It is two-way communication and interaction, with the overall goal of better decisions that are supported by the public" (Creighton, 2005, p. 7). Public participation becomes political identity in the public sphere through various citizen journalism practices and conversations on social media, particularly Twitter.

Given such background, this study assumes that citizen journalism through their activities on Twitter in the new media era within the context of mass media deviance may drive or alter public (netizen) participation. This explains that public participation has undergone a shift. Citizen journalism as a form of public participation was previously distributed via mass media. Yet, today, citizen journalism as a form of public participation is produced, distributed, and talked about via Twitter. Initially, public participation is understood as a process of public involvement in the government's decision-making process, but today, public participation is the practice of identity politics by polarized citizens. Therefore, the problem statement of this study is *how did citizen journalism as public participation in the context of new media in Indonesia shift from street to tweet?*

2. Methodology

Data in this study were gathered through the combination of various techniques in various different stages. At the initial stage, data were gathered through online participation-observation. Hence, a social media account on Twitter was made at the onset of the study. Then, the researcher socialized with other accounts, particularly those that frequently practice citizen journalism. This was carried out in order to obtain inside perspectives from the netizens.

The gathered data were subsequently divided into three different kinds. *First*, elicited data acquired from communities or Twitter accounts practicing citizen journalism. *Second*, field-note data acquired during in-depth interviews with selected number of sources. There were four informants in this study in which three of them are netizens active on Twitter. The minimum requirement set to be a source in this study is that they have disseminated citizen journalism product via Twitter. Additionally, one informant is a former executive producer of Elshinta Radio who managed the Information from You (IDA) program as a form of citizen journalism in the pre-Twitter era. The object of this research is to find the various relations interlinked with citizen journalism as a form of public participation in the context of new media in Indonesia that can alter the form of citizen journalism from street to tweet. This study began by observing the timelines on Twitter with special attention to materials containing citizen journalism as a form of public participation.

Third, archival data in the form of archives or documents in writing, pictures, or video recordings produced, distributed, and responded by fellow netizens or saved in Twitter. These are conversation data among netizens on Twitter, and they were obtained via a Twitter conversation reader operated by DEA (Drone Emprit Academic), which is a big data system with the ability to capture and analyze netizens' conversations on social media, particularly Twitter in real time.

The next stage was identifying Twitter accounts (both pseudonymous and actual) that contain citizen journalism as a form of public participation in the new media era to be interviewed. Selection of citizen journalism bearing contents employed the three indicators from Keeter (2003) namely: (1) contents relating to public issues and public problem solving; (2) public (netizen) participation is voluntary; (3) the public is citizens or members of a group or organization.

The interview began with the most distinctive general question, "What is your opinion about citizen journalism as a form of public participation in the new media era?" Then the interview led to several more specific questions to find various relations that interlink with citizen journalism as a form of public participation in the context of new media in Indonesia that can alter the form of journalism from street to tweet. For instance, "Why was the journalistic work you made distributed via social media (Twitter) instead of mass media?" or "How do you assess something you are about to post on Twitter as important to the public?" The interviews were done in Jakarta throughout the month of September 2018.

The collected data were compiled thematically based on the information obtained from the interviews and observation of conversations on Twitter timelines. Data compilation was done by arranging issues relevant with the study. The final part of the data analysis method involved data interpretation by using various data validity tests through triangulation theory or theoretical perspective. The data obtained was subsequently pro-

cessed through several categories leading to attempts at generalization which was then presented in an interpretative and descriptive manner to answer the problem statement.

3. Research Findings and Discussion

3.1. Perspective of Citizen Journalism in Indonesia, from Local to National Conversations

In Indonesia, citizen journalism in the form of public participation can be traced back to when *Radio Elshinta, News and Talk* Jakarta began broadcasting news from citizens. Radio Elshinta involved its listeners to provide information other citizens needed. According to Kurniawan (2007) and Kurniawan and Loo (2007), since *Elshinta* started to become a news radio (2000 to 2007), it maintained 100,000 citizen reporters. Kurniawan mentioned that internet use in Indonesia was still low at the time. Additionally, the public's level of education was low and there was a strong verbal culture amongst the public, this led to *Elshinta's* success in involving the public to engage in citizen journalism.

Meanwhile, Sukartik (2016) in his research expounds that *Elshinta* radio oversees a national network, and it constantly involves the public to send news and information. According to informant 1 (initial TA), who is a former executive producer and senior broadcaster of *Elshinta* radio, public participation is specifically allocated in the IDA program:

IDA is a program designed to accept and disseminate any information from Elshinta listeners as Indonesian citizens wherever they may be and can tune in to Elshinta. The information can get responses from other listeners from Elshinta's entire broadcast area all over Indonesia. In practice, various information from citizens are not only broadcasted via the IDA program but they would also appear briefly in other programs.

To Elshinta, news or information from citizens are crucial and prioritized for immediate broadcast. As of current, the process of sending news and information, done through short messages (SMS), emails or direct reports via telephone, remains the same. *Elshinta* radio and its citizen journalism program was subsequently followed by other radio stations having national or local coverage like *Suara Surabaya* radio (Adi, 2016).

By prioritizing news or information from the public, anywhere they may be in Indonesia, they provide an understanding of local events that may turn into a national conversation. This is due to the fact that when information or news from a member of the public is broadcasted, it would often garner responses from other citizens all over Indonesia. Such interaction enables every citizen to find new ways of facilitating direct interactions amongst themselves, which had formerly been obstructed by dis-

tance. According to Gordon and Silva (2011), this perspective emphasizes the use of locally-based communication technology driving every citizen to develop local awareness. This local awareness generates new connotations such as distributing information or local news that are considered special, and it positions locals as participative and collaborative agents. Local awareness subsequently creates geographical context for data and networks of news and information.

At this stage, citizen journalism comes in the form of coverage concerning information considered important to the public such as traffic accidents, missing persons, or criminal information like theft. Such information is conveyed voluntarily by citizens to other citizens. The practice of citizen journalism through Elshinta radio as a mass media is a form of public participation to influence government in making decisions. According to Informant A (initial TA), information from citizens does not only impact government performance but it also assists the public in responding to every problem they face.

Many citizens gain benefit from information provided by other citizens via Elshinta radio. For your information, government personnel also keep listening to Elshinta radio to find out what citizens experience or want. In many cases of citizen report such as collision causing traffic jam, it could help the police in guiding traffic and is an important information for other motorists.

Various patterns or forms of interactions among the public pertaining to local news or information will become more extensive and massive due to the advent of new media. Unlike the advent of local news or information through radios like Elshinta, in the new media era, local news or information dissemination does not go through a gate keeper process as mass media does or a queue list for broadcast. The social space brought about by new media's presence has produced a common platform for social and political interactions amongst the citizenry. The cyber world's social space has become a highly active element in producing social relations (Kitchin & Dodge, 2011), and concurrently produced by social interactions (Lefebvre, 2016).

Gordon and Silva (2011) consider these public activities as a collective process of public empowerment. Hence, 'locality' is no longer defined in terms of physical proximity as the citizens using these communication technology devices can mutually interact, regardless of the distant physical conditions they are in. At this stage, citizen journalism can no longer be understood as a citizen's act in finding, acquiring, having, keeping, processing, and conveying information or news in the form of writings, audios, visuals, audio and visual, and data or in other forms via mass media either printed or electronic. At this stage, citizen journalism is a form of public participation indicated by four essential factors, namely: *first*, without the gatekeeper process, which commonly occurs

in the journalistic process of mass media. *Second*, the process happens in real time, anywhere and everywhere any citizen can conduct journalistic practices. *Third*, the practice of citizen journalism as a form of public participation is able to stimulate conversations massively on Twitter. *Fourth*, netizens as virtual citizens involved may appear in the form of anonymous account on social media. this is the first part of the change to the next stage that we call information disruption.

In this context, we define information disruption as change that occurs as a result information being able to be produced, distributed, and consumed by anyone, any-time, and anywhere with ease. This is a more specific definition because the context of interaction among citizens is via social media, Twitter. A broader understanding may define this as disruptive technology (Danneels, 2004). This understanding assumes that information disruption occurs due to the advancement of communication technology.

The information disruption stage seems to be in more chaotic in Indonesia given that concurrently there are very dynamic political activities leading up to the 2019 presidential election. Hence, it is extremely difficult to differentiate between actual information from citizens for public good, or fake information and hoaxes to delegitimize the other group that has differing political inclination. This stage is indicated by two essential factors, namely the waning of mass media along with the intensification of social media and citizen journalism as public opinions. We name this stage as the post-truth era.

3.2. The Waning of Mass Media: The Intensification of Social Media in the Post-Truth Era

Today, internet use by the Indonesian public has influenced public participation changes or developments in the practice of citizen journalism. According to a survey by the Indonesian Internet Service Providers Association (APJII, 2017) until 2017, the number of internet users in Indonesia reached 143.26 million or 54.68% from the total Indonesian population of 262 million. This amount continues to increase year by year. Data from We Are Social (2018) states that 130 million or 49% of Indonesians were active on social media. Approximately 35 million or 27% of the population actively used Twitter for various activities. The data shows that Twitter users in Indonesia are considered as the most productive in the world. In 2014, Indonesia placed fifth on the world tweeting rank. While, actually, at the time Twitter reported Indonesian users had only reached 29 million (Lukman, 2013).

One interesting thing about Twitter when compared to other social media is its Twittersphere as an active discussion forum particularly for social and political issues among citizens. Due to this feature, Twitter is often claimed as a type of social media capable of making predictions (Asur & Huberman, 2010). Nevertheless, Twitter has its weakness because Twitter users are not

samples representing a population, due to the fact that its use is favored by urban population or those with good economic capacity (Hecht & Stephens, 2014; Malik, Lamba, Nakos, & Pfeffer, 2015; Mislove, Lehmann, Ahn, Onnela, & Rosenquist, 2011). In addition to that weakness, Twitter is also frequently used for various particular interests such as popularizing a product or harassing others by involving robot accounts automatically used through the computer's script system (Donath, 2007; Thomas, Grier, & Paxson, 2011; Thomas, McCoy, Grier, Kolcz, & Paxson, 2013). Hence, it is quite vital that communities, opinion leaders or new norms emerge from activities on Twitter in a cyber culture.

The relationship between citizen journalism and public participation on Twitter, hence, develops within a cyber culture chock-full of various activities mediated via the internet. Fellow members of the society can be connected expansively, rapidly, and in real time, despite never having met one another. Therefore, Lévy (via Macek, 2004) uses the term cyber culture in referring to the internet as a virtual space. Lévy argues, the internet's rise brought about various new forms of message distribution. This is why cyber culture is known for its changes in technical (communication) devices, practical habit, attitude, mindset, and values that develop along with the virtual world.

The effect of communication technology in the new media era that manifested in various ease of access to anything over the internet have shifted the public's pattern in consuming and distributing information. Information is easily found on the internet and can be modified to be redistributed via numerous social media channels. Social media platforms like Twitter have become a means for exchanging information among the public (Lim, 2017). Any citizen with access to the internet or social media can act as an agent of social even political change (Gordon, 2017). In some countries, public interactions on social media have triggered social and political changes.

Public participation and interaction have become active terms in the current era of new media. Citizens interconnected and mediated by the internet are known as netizens, a term initially coined by Michael Hauben in 1995 combining the words network and citizens. Netizens may be defined as citizens who are active and mutually interact within an internet network system (Hauben & Hauben, 1997). According to Levinson (2014), the new public interaction within cyber culture is regarded as new new media, i.e. all information in all forms being distributed more rapidly and expansively thereby leading to the formation of new concepts, new lifestyles, and even new forces in political activities.

According to informant 2 (initial HSW), a social media activist in Indonesia, interactions or conversations among netizens on social media, particularly Twitter, increase exponentially when pertaining to the 2019 Presidential Election. The rise of conversations on Twitter has polarized netizens into two major groups. The first group represents the Presidential and Vice-Presidential

candidates of Joko Widodo and Maruf Amin (Number 01), while the latter represents the Presidential and Vice-Presidential candidates of Prabowo Subianto and Sandiaga Uno (Number 02). On Twitter, this polarization is frequently observed in the form of hashtag wars:

There is a tendency that Indonesian netizen conversations intensify when discussing politics, particularly when relating to the 2019 presidential election. However, upon closer observation, this intensification has a pattern. For instance, when a significant incident is not broadcasted by mass media to the public, netizens take on the role of discussing it on Twitter until it goes viral. Upon closer examination, the process of making things unreported by mass media go viral originates from netizen groups of similar political affiliation, that is the opposition group. Upon even closer examination, this condition may appear because mass media has politically been coopted by the reigning non-opposition group. So, Twitter becomes an alternative media in political participation for expressing the dissenting opinions of the citizens. Through Twitter, these opinions can easily go viral on account of one of Twitter's features, namely the hashtag.

According to Bruns and Burgess (2011) Twitter hashtag is a brief keyword that begins with the '#' symbol. Hash-tags function as a means to coordinate, consolidate, and distribute news/information to more netizens. If a hashtag becomes the talk among netizens, then it would have

greater influence on other netizens on Twitter. This is due to Twitter's capability of disseminating information via mentions, retweets, hyperlinks, hashtags, and other functions (Ausserhofer & Maireder, 2013). Hashtag wars may occur as seen in Figure 1.

Hashtag wars are at the forefront, the most obvious and the most frequent to appear on Twitter in relation to netizens' conversations about politics leading up to the 2019 presidential election. These data in the form of SNA maps can, thus, be read or understood in three ways, namely:

First, netizens' conversations experienced polarization into two large groups representing two political interests. Polarization was established based on differing political identity leading up to the 2019 presidential election. As a result, when netizens identified as opinion leaders within each group convey (nonpolitical) information as a form of citizen journalism relating to the wider public interest, they do not receive any support from the opposing group. Netizens' political polarization on Twitter disregards the wider public interest (Syahputra, 2017).

Second, data from the SNA maps showing this polarization indicates the absence of mass media. Mass media are, seemingly, uninterested in being present to provide proper analysis or information in response to the prevalence of the political identity based polarization. To the netizens and the opposition, mass media is considered as being affiliated to and coopted by the ruling political elites. Nevertheless, in some of the cases observed on Twitter, several mass media coverages had also been

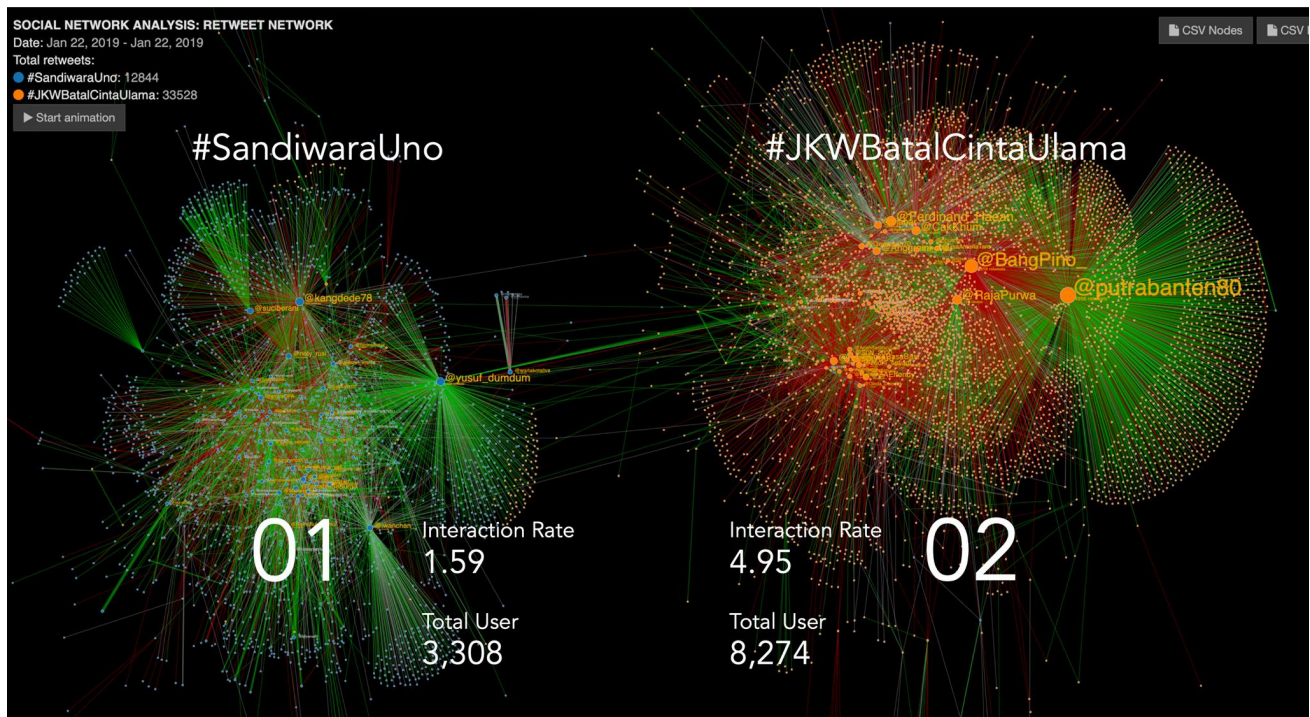


Figure 1. SNA (Social Network Analysis) map of netizens' chats on Twitter referring to the hashtag wars between the number 01 Presidential Candidate pair (Jokowi-Ma'ruf Amin) and the number 02 Presidential Candidate pair (Prabowo-Sandiaga) on 22 January 2019. Source: DEA (2019).

used to support the opposition group. Although they often criticize mass media for having been coopted by the ruler, mass media news is also trusted because they benefit from the coverages. This also applies vice versa, mass media coverages are used to support the ruling group because they think they gain benefit from them. This second point emphasizes that mass media coverage concerning politics in Twitter conversations among netizens who experienced polarization means nothing since it constantly enters an established polarized sphere of netizens.

Third, the two points have greater impact on citizen journalism activities. An example is when a netizen unaffiliated to any group conveyed important information to the public. Concerning the abuse of Audrey, a junior high student in Pontianak, as a practice in citizen journalism that went viral. It went viral because it was posted by an opinion leader from one of the groups with the hashtag #JusticeForAudrey (Santoso, 2019). This was then covered by mass media, but it did not gain the support of other groups from the opposing political view. This continued up to the point that each group became trapped in a polarization of unilaterally defending the truth.

Therefore, we intend to explain this as a new emerging phenomenon brought about by the advent of new media in the post-truth era. The term post-truth was first introduced in 1992 by Steve Tesich in *The Nation*. It was initially used to reflect the Gulf War and the case of Iran occurring in that period. The term was then popularized by Keyes (2013) in his book *The Post-Truth Era*. As a journey, post-truth is a concept attached to a particular period (Besserman, 1998; Green, 1995). Yet, it refers to similar issues regarding public concern over truth claims. Citizens involved in truth claim are likened to a teller peddling truth.

In the new media era, post-truth may be recognized through various discursive spaces on social media like Twitter. Chats on Twitter that transpire constantly, massively, and rapidly may lead to trust or distrust in honesty, deceit, truth, virtue or vice, and in anything wanting to be considered as truth. Informant 3 (initial EN), a journalist active on Twitter, explained that journalists and media can be actors in the formation of truth emerging in discursive spaces on social media, like Twitter:

Through certain techniques such as framing, truth can be established once it is constantly reported by mass media. The news will then become conversations on Twitter. The netizen group that massively and incessantly support this news will consider the news or information as the truth. This process becomes easier because netizens had initially been polarized by political emotions.

This study found that the polarization of netizens in the post-truth era is also a result of mass media's deviating function or journalists' biases in the reporting process. Mass media no longer assumes its main function as a

provider of objective and neutral information to the public and as a watchdog of the state. Consequently, netizens with opposing political choices in the Presidential Election express their differences in an increasingly intensive and infuriated manner on account of the media's absence as an alternative source of information for the public. While in fact, the media should provide important information concerning political news coverage leading up to the presidential election to help citizens make their decision (Strelitz & Steenveld, 1998).

Such situation had developed because mass media has been run by conglomeration principles and is controlled by conglomerates who are also leaders of political parties affiliated with power (Lim, 2011; Nugroho et al., 2012; Syahputra, 2013). These various relations are the most significant reason for the intense, profane, and hate-speech-ridden activities observed to occur on Twitter. The following SNA data on netizens' activities on Twitter describes the absence of mass media as an information provider to the public. In Figure 2, media was not present to mediate the two groups of netizens and provide objective information required by both sides while they were discussing the presidential election on Twitter. Mass media's absence as a provider of information when netizens discussed various public issues had reinforced the polarization instead.

In this context, post-truth is a description of social and political conditions wherein the public no longer respects the truth on account of political polarization, unethical journalists produce fake news, hatred-inducing citizen journalism emerges on account of political differences, and disorganized social media activities prevails. Politicians, journalists, citizens, scholars, and even, in the Indonesian context, ulemas only accept what they believe or feel is true based on emotional drive or interest. This itself is an ethical challenge for journalistic activities in producing news in the post truth era (White, 2017). The relations of these various conditions, i.e. the fading mass media and the strengthening of social media in the post-truth era, have shifted the practice of public or citizen journalism into a practice of expressing public opinion. According to informant 4 (initial SR), a lecturer active on Twitter, this change indicates three things, namely:

First, the public's trust in mass media has declined due to the media's political partisanship. Second, people are more interested in politics because it concerns a wider public interest. Third, social media like Twitter can be present as a public space where people can freely express their opinions.

This shift occurs because of changes in patterns of interactions between the public and the media, as well as among the citizenry themselves. This new attribute allows anyone active on social media to engage and be involved as information consumers as well as producers. Every activist or social media user even plays a role as a message distributor (Weeks & Holbert, 2013).

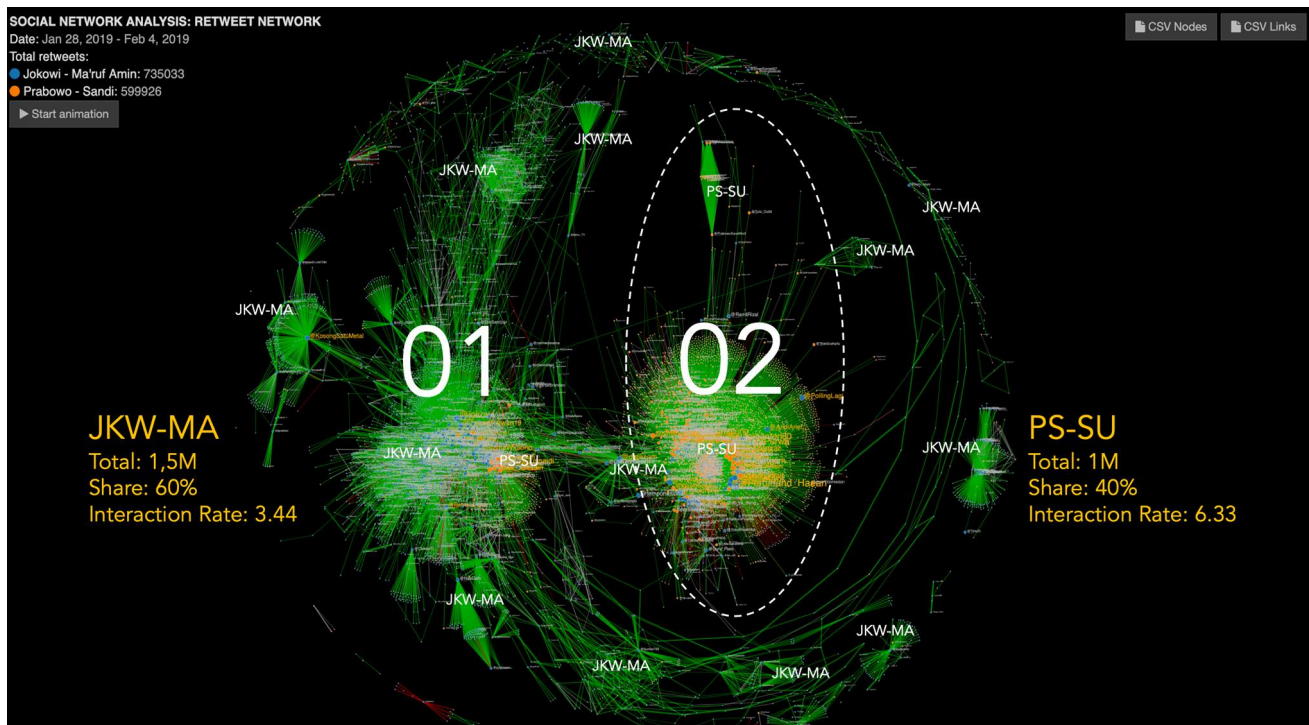


Figure 2. SNA map of netizens’ conversations on Twitter concerning the Presidential Election between the Number 01 pair of candidates (Jokowi-Ma’ruf Amin/JKW-MA) and the Number 02 pair of candidates (Prabowo-Sandiaga/PS-SU) on 28 January 2019 and 4 February 2019. Source: DEA (2019).

This indicates a shift from the mass communication era to the internet-based communication era (Khang, Ki, & Ye, 2012). Formerly, the relation between the public and the media placed citizens as passive recipient of media messages. However, technological advances have altered the situation. The invention of the internet along with its communication tools have provided the public the freedom to openly express their voices. People would mutually create, share, and comment on news/information relating to public interest. The participatory notion of users and their active (instead of passive) role in the news-making process have led to the ‘idea’ of citizen journalism.

3.3. Citizen Journalism as Public Opinion

According to Kolodzy (2007), citizen journalism can be construed as citizens active in the process of gathering, reporting, analyzing, and distributing news/information. These citizens have no journalistic knowledge or experience. Yet, they are capable of utilizing modern technology such as computer, software, and the internet to share their creation, arguments, criticism, and their distribution throughout various available mass media outlets. Although they carry out the process of gathering, reporting, analyzing, and distributing news/information themselves, it is still mediated by mass media. In this perspective, the position of mass media is vital. It has a huge role in communicating information among the pub-

lic (Happer & Philo, 2013). Meanwhile, Lim (2013) states that media has a role as an amplifier, echoing issues existing in the society.

However, currently in Indonesia, citizen journalism has been undergoing a shift. According to informant 3 (initial EN), the shift process happened because a part of the public consider mass media as being a part of the ruling authority because they are owned by conglomerates who also sit as General Chairman in political parties in support of power. Additionally, the shift process happened very quickly on account of social media’s presence:

The public tend to choose using social media in reporting information or news they have than via mass media. the public knows, it’s like a public secret that mass media are owned by political parties affiliated to the current regime. This is why netizens, who are different from the rulers, to prefer disseminating information through their social media account. Then the opposite happens, in news production, mass media in fact cites several citizen journalism contents disseminated via social media. Particularly when the information or news distributed by citizens on social media go viral.

This phenomenon is another variant that sheds a different understanding on the prior definition of citizen journalism. Lang (2010) states that citizen journalism is a form of journalism produced by nonprofessionals. It may

come in various forms including texts, images, videos, and audios. It may utilize various tools such as mobile phones, computers, audio recorders, or even mere pen and paper. In this perspective, mass media's position is not too significant due to the presence of internet-based new media, like Twitter. The large number of social media users and democratic climate allowing freedom of expression in Indonesia have intensified social media activities highly, quickly, and instantaneously (real time). Such condition has increasingly driven citizen journalism to no longer be mediated by mass media but social media instead. On Twitter, citizen journalism activities can quickly go viral as they are mobilized by actors known as opinion makers. These opinion makers stand alone on social media, yet they are interconnected between one another. The extremely dynamic context of social media enables anyone to become a character that designs their own desired opinion. This study found that, even on Twitter, opinion leaders or opinion makers may originate from an anonymous account.

Given the various circumstances above, activities on Twitter are exacerbated by the netizens' lack of self control. Suler's (2004) study explains how an individual may express things on social media that they would not in their daily life. This phenomenon is described as the online disinhibition effect. Netizen convey freely what they want to via social media. Some of the information/news distributed may be products of citizen journalism. Some other information/news, however, are public opinions. Some information/news may even carry vague or ambiguous contents, without clarity whether the information/news delivered concerns the public's interest (as public opinion) or political support to a particular presidential/vice-presidential candidate.

Such ambiguity was frequently produced by netizens who were polarized by their political proclivity in the 2014 Presidential Election, which then continued to the 2019 Presidential Election. The developments explained in the above passages show that citizen journalism in the era of new media has paved way for the active participation of netizens. The definition of citizen journalism can no longer be simplified as a process of gathering, reporting, analyzing, and distributing news/information that is obtained independently through mass media because citizen journalism overlaps with public opinion. As mentioned by Franklin (2013), citizen journalism is the process of giving voice to the voiceless, because numerous public opinions are not represented by mainstream media. In the era of new media, citizen journalism may be construed as citizen participation in expressing their opinions. Hence, Goode (2009) explains that citizen journalism assumes the basic features of democracy. This is an expression of the fundamental democratic principle about freedom of speech and expression. What is most crucial is that social media has given citizens the opportunity to talk about their issues (public interest) unrestrictedly thereby making their voices heard by the government.

4. Conclusion

Citizen journalism in Indonesia initially emerged via the radio with the advent of the *Elshinta News and Talk* radio program in Jakarta in 2000. At the time, social media like Twitter was still nonexistent. The strong verbal communication culture among the citizenry had led to *Elshinta's* success in involving the public as practitioners of citizen journalism. *Elshinta* had constantly involved the public in their broadcast to deliver news/information. It is recorded that up till 2007 *Elshinta* had 100,000 citizen reporters.

Today, however, the presence of social media has gained the public's interest. The substantial scale of internet use by Indonesians has also contributed to the changing or developing of public participation in citizen journalism activities. The public prefers to use social media like Twitter in delivering their news/information. This shift is also due to the fact that mass media, as the mainstream news/information provider, has been considered as a political partisan.

Citizen journalism is entering a new phase in the era of new media. This new phase is similar to a journey about change that occurs within citizen journalism as public participation in the context of new media in Indonesia from street to tweet. The most striking aspect observed in this new phase is the ambiguity between news, information, and opinions conveyed by citizens via social media, such as Twitter. Nevertheless, these activities have provided the opportunity for the public's voice to be heard by the government. Therefore, the public will also gain this benefit when they practice citizen journalism mediated via mass media, which is the mainstream news/information provider.

This study contributes to the concept of citizen journalism and robust learning for the public on their participation and involvement in the era of new media. Additionally, this study provides greater insight on the relationship amongst the citizenry and how they openly engage in discussions of public interest. This research may have implication on the fading of mainstream mass media and the end of the independent and free press era.

Acknowledgments

We would like to convey our sincere gratitude to our five informants who have shared their experiences and information with us in this study.

Conflict of Interests

The authors declare no conflict of interests.

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Article

AMEND: Open Source and Data-Driven Oversight of Water Quality in New England

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Submitted: 29 March 2019 | Accepted: 15 May 2019 | Published: 6 August 2019

Abstract

The advent of government transparency through online data publication should provide a transformative benefit to the information gathering practices of civic organizations and environmental advocates. However, environmental agencies and other reporters often disseminate this critical data only in siloed repositories and in technically complex, inconsistent formats, limiting its impact. We have developed a new open source web resource, the Archive of Massachusetts ENvironmental Data or AMEND, which curates information relating to federal, state, and local environmental stewardship in Massachusetts, focused on water quality. We describe the construction of AMEND, its operation, and the datasets we have integrated to date. This tool supports the development and advocacy of policy positions with published analyses that are fully reproducible, versioned, and archived online. As a case study, we present the first publicly reported analysis of the distributional impact of combined sewer overflows on Environmental Justice (EJ) communities. Our analysis of the historical geospatial distribution of these sewer overflows and block-level US Census data on EJ indicators tracking race, income, and linguistic isolation demonstrates that vulnerable communities in Massachusetts are significantly overburdened by this form of pollution. We discuss applications of this analysis to the state-level legislative process in Massachusetts. We believe that this approach to increasing the accessibility of regulatory data, and the code underlying AMEND, can serve as a model for other civic organizations seeking to leverage data to build trust with and advocate to policymakers and the public.

Keywords

advocacy; databases; environmental data; environmental justice; Massachusetts; open source; policy; water quality

Issue

This article is part of the issue “Civic Organizations and Digital Technologies in an Age of Distrust”, edited by Eric Gordon (Emerson College, USA).

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1. Introduction

Establishing trust between policymakers, civic organizations, and the public about the merits of policy decisions requires agreement on the facts underlying policy issues. That agreement is predicated not only on the existence of robust data on present and historical conditions and government actions, but also on shared access to that data. As Janssen, Charalabidis and Zuiderwijk (2012) wrote of the benefits of government data transparency, “By opening data, users can validate and verify whether the conclusions drawn from the data are correct and justified, and they can analyze the previously collected data to sharpen the focus of policy-making.” The advent of

government transparency through online data publication should provide a transformative benefit to “interaction between governments, citizens, and the business sector” and especially the information gathering practices of civic organizations and environmental advocates (Bertot, Gorham, Jaeger, Sarin, & Choi, 2014). Particularly as governments move towards more data-driven administrative procedures, data transparency will become an increasingly important aspect of democratic accountability (Redden, 2018).

Access to data at scale on American regulatory policy and enforcement has enabled a variety of impactful academic research in recent years on topics including the relationship between regulation and innovation

(Jaffe & Palmer, 1996), the inter-connectivity between states' environmental regulatory policy (Konisky, 2007), how border-adjacency incentivizes free ridership in regulating air pollution (Konisky & Woods, 2010), and much more. Meanwhile, a variety of web portals and online tools such as the US Geological Survey and US Environmental Protection Agency's (EPA) Water Quality Portal (National Water Quality Monitoring Council, n.d.) are used to publish and distribute particular datasets useful for this field of research. Together, this set of tools supports experienced researchers with technical skillsets in undertaking substantial research studies. But, in general, the adoption of open data policies among governments worldwide has been slow and uneven and the provision of tools to make public data truly accessible has lagged behind the mere publication of data (Bertot et al., 2014; Janssen et al., 2012). The studies cited above have generally required significant querying, reformatting, transformation, and cleaning of data, and often have required the integration of data across several sources.

Moreover, we have experienced that the existing set of tools is not supportive of stakeholders with less time, money, or technical expertise. These users, including policymakers, civic organizations, journalists, and citizen advocates, have difficulty identifying, accessing, and using data resources. Meanwhile, the diversity and scale of relevant, publicly available data is expanding due to new technologies and reporting requirements. All these factors hamper stakeholders' ability to do analysis that would inform their actions on the policy landscape. These challenges are roadblocks to incorporating public data into the policy oversight and advocacy role of these stakeholders; they limit shared access to a common set of facts.

We believe that an ideal data resource for civic organizations should meet the following requirements to promote reproducibility, extensibility, and trust by users:

- Serves diverse users: The resource should increase the accessibility of relevant data to stakeholders from communities including civic organizations, journalists, and citizen advocates, including users that have and have not previously worked with the constituent datasets and users who do and do not have technical backgrounds.
- Transparent: The origin of, and history of changes to, all data and analysis elements provided on the resource should be clearly stated, versioned, and traceable.
- Open source: The resource should be reliant only on open source technologies to develop and maintain the site. The barrier for other contributors to participate in the development process should be low and collaboration should be encouraged.
- Low development and maintenance cost: It must be possible to create, host, and keep up the resource without dedicated web development personnel, e.g., with a single volunteer or small part-time team.

These principles align to the tenants of the movement for "reproducible science" (Peng, 2011; Schwab, Karrenbach, & Claerbout, 2000). When research is reproducible, "all details of the computations—the underlying data and the code that generated the results—are made conveniently available to others" (Stodden & Miguez, 2014). A culture of reproducibility not only supports other researchers in leveraging and extending past research, but also generates confidence and trust in analysis and results.

In this article, we present our work towards establishing the Archive of Massachusetts ENvironmental Data (AMEND). AMEND is an open access, integrated repository of environmental regulatory data and analysis focused on enhancing the use of evidence and accountability for water policy in Massachusetts and the New England region, which has been designed to adhere to the four principles outlined above. We describe the local context for issues related to water policy and enforcement in the region in Section 2 and detail the development and features of AMEND in Section 3. Section 4 provides a case study of the application of AMEND to a high-profile contemporary water policy issue and Section 5 contextualizes this work in terms of modern concepts in media theory. We conclude in Section 6 with an outline of future work including planned features and extensibility to other localities.

2. Local Context

Massachusetts has a long history of environmental advocacy and large-scale environmental policymaking, and a vibrant present-day community of watershed associations and other environmental groups. Massachusetts was home to the well-known lawsuit against W. R. Grace and Beatrice Foods over groundwater contamination in the city of Woburn and the ensuing Superfund cleanup (Brown, 1987; Kiel & Zabel, 2001); embarked on a trail-blazing, multi-billion dollar combined sewer overflow (CSO) elimination and mitigation project to clean up the Boston Harbor and connected waterways (Dolin & Levy, 1990; Levy & Connor, 1992); and adopted climate change oriented emissions reductions a decade ago under the Regional Greenhouse Gas Initiative (Byrne, Hughes, Rickerson, & Kurdgelashvili, 2007). In each of these cases, data—including data on water quality, epidemiology, effluent, and emissions—has been instrumental to motivating action as well as to monitoring and verifying the efficacy of that action.

2.1. Stakeholders

Massachusetts is home to a rich array of civic organizations dedicated to environmental protection and water resources, specifically. Together, these groups continue a centuries-long legacy of political organizing around rivers in the US (see e.g., Randolph, 2018).

The Mystic River Watershed Association (MyRWA) is a non-profit organization dedicated to the preservation

and enhancement of the Mystic River Watershed in Eastern Massachusetts. MyRWA is a science-based environmental advocacy organization that operates dedicated observational programs to study water quality, stormwater pollution, and fisheries health and educational programs to inform students and the broader community about these and other topics. Its mission is to protect and restore the Mystic River, its tributaries, and watershed lands for the benefit of present and future generations and to celebrate the value, importance, and beauty of these natural resources. The MyRWA Policy Committee is a group of staff and volunteers that collaborate to engage in advocacy in service of this mission. The Committee's work includes filing comment letters in response to development proposals and permit applications and developing testimony on behalf of, or in opposition to, environmental legislation and rules at the local, state, and federal level. Much of MyRWA's work is supported by governmental and foundation grants. All these written materials—grant proposals, reports, comment letters, and testimony—regularly contain references to data on water quality conditions, status of impairment in a water body, and permit or license conditions to bolster an argument about what type and level of resources or regulations are needed in a local area.

Most major water bodies in Massachusetts have active watershed groups associated with them, such as the Charles River Watershed Association, Connecticut River Conservancy, and Merrimack River Watershed. Economic research across more than 2,000 US watersheds has found that higher activity among such watershed groups in the US is a causal factor of improved local environmental water quality (Grant & Langpap, 2018). Many of these groups are members of the statewide Massachusetts Rivers Alliance. Many regional and national environmental groups also do substantial work on water policy in Massachusetts, such as the Conservation Law Foundation and Environmental League of Massachusetts.

Among the journalistic organizations covering environmental policy in Massachusetts are regional periodicals (e.g., *Boston Magazine*, *The Boston Globe*), radio networks (e.g., WBUR and WGBH radio), local newspapers (e.g., *The Eagle-Tribune*, *Worcester Telegram*), and national outlets like Inside Climate News.

While much of our work is motivated by the needs of the MyRWA Policy Committee, we view each of these organizations as potential users of AMEND. Individuals and organizations are often not aware of the variety and disparate sources of information related to their work that is published by public agencies. Creating an accessible, transparent and centralized repository of data improves the ability of advocates to examine this information and invites a larger and more diverse base of contributors. We seek to develop AMEND as a platform to facilitate collaboration across these organizations and their constituents.

2.2. Regulatory Environment

As in any US state, a web of federal, state, and local agencies are responsible for environmental regulation in Massachusetts. Among these are the US EPA; the Department of Environmental Protection (DEP) within the Massachusetts Executive Office of Energy and Environmental Affairs (EEA); the Attorney General of Massachusetts; the Conservation Commissions of each municipality within the state; and our state legislature, the General Court of the Commonwealth of Massachusetts.

One of the motivating factors for our work was an April, 2016 declaration by MA Governor Charlie Baker to pursue delegation of the US Clean Water Act's National Pollutant Discharge Elimination Systems (NPDES) program to Massachusetts, which would transition the Commonwealth from federal to state primacy for oversight of this important regulatory instrument (Office of Governor Charlie Baker and Lt. Governor Karyn Polito, 2016). In a unified response, the state's environmental advocates opposed this delegation on the grounds that the DEP was already underfunded to pursue its current mandate and that a sustainable source of funding for the DEP to maintain staffing on oversight in future years had not been identified (Abel, 2016). Data on the historical funding and staffing levels of the DEP, and how agency outcomes like enforcement actions relate to those resources, were instrumental in providing evidence to evaluate and support argumentation around this issue. The proposal was defeated and, when the Governor reintroduced a similar bill in the next session (Baker, 2017), an expanded effort drawing on these data sources was again successful in defeating delegation.

MyRWA also evaluates and publicly comments on Massachusetts General Law Chapter 91 (Ch. 91), the MA Public Waterfront Act, permit applications and renewals. Ch. 91 codifies a public trust doctrine preserving public access to coastal and inland waterways, which include much of the Mystic River and its tributaries. In reviewing these applications, there is often a need to understand the permit conditions of similar properties, which have not in general been readily available for comparison.

As a final example of the regulatory environment in MA, consider the US EPA's General Permits For Stormwater Discharges From Small Municipal Separate Storm Sewer Systems (MS4) in Massachusetts (US EPA, n.d.-b). The permit, which ultimately took effect in July 2018, was drafted to replace a 2003 MS4 permit that expired in 2008. Because the permit imposes stronger stormwater regulations on more than 200 municipalities, it will have profound fiscal and environmental impacts throughout the state. Understanding the state of impairment and sources of pollution to water bodies in each of these municipalities should play a fundamental role to the community and government's approach to management and oversight of this important new policy.

2.3. Existing Resources

While Massachusetts has a large number of state-specific regulations, enforcement agencies, and authorities that each generate individual data assets that can be used to understand their work, there have historically been few resources available for accessing and manipulating data related to the issues they govern. Available MA-specific resources included certain datasets published on the EEA’s website, including an employee directory and fish mercury data; MassBudget’s Budget Browser (Massachusetts Budget and Policy Center, n.d.); and US EPA’s Watershed Assessment, Tracking & Environmental Results System (US EPA, n.d.-c). Recently (August 2017), the EEA Executive Data Portal (Massachusetts EEA, n.d.) was made available and offers a web query service and visual dashboards for data related to state permits, facilities, inspections, enforcement, and drinking water measurements. The Data Portal represents a substantial step forward in state-provided data services for the stakeholder community. However, its scope is limited to certain state agency-generated data assets.

This data has not been widely used by the groups listed in Section 2.1. for reasons of awareness, ease of access, and comprehensiveness. For example, a 2017 Boston Globe article (Abel, 2017) discussing the relationship between DEP funding levels and enforcement activity relied on Freedom of Information Act requests to the agency for aggregate reporting on enforcement levels, staffing, budget, etc. rather than making use of the online data resources related to these issues. A 2019 WBUR story about the public health threat of sewage overflows

(Wasser, 2019) relied on data consolidated in 2013 by other journalists (see also Section 4.3.).

In general, there are several reasons why advocates and civic organizations are motivated to develop their own data repositories. First, much of the analysis they seek to perform (as in Section 4 and other examples cited in this article) is comparative and integrative, requiring data sets published by different agencies to be brought together. Second, analyses involving manipulation of data assets such as text processing, feature engineering, or statistical modeling benefit from direct access to data and may be complicated or slowed by mediation by a third party service. Finally, as digital publication is ephemeral, maintaining an independent repository mirroring public data assets ensures that they will continue to be available (so long as the repository maintainer persists), regardless of changes in regulation or administration at public agencies.

3. Archive of Massachusetts ENvironmental Data

To address these conditions and improve the accessibility of integrated environmental regulatory and quality data for Massachusetts and the New England region, we have developed the open source and open access AMEND (AMEND; Figure 1).

3.1. Development

AMEND has been developed to adhere to the principles of a trust-promoting public data resource outlined in Section 1. AMEND is entirely open source, built us-

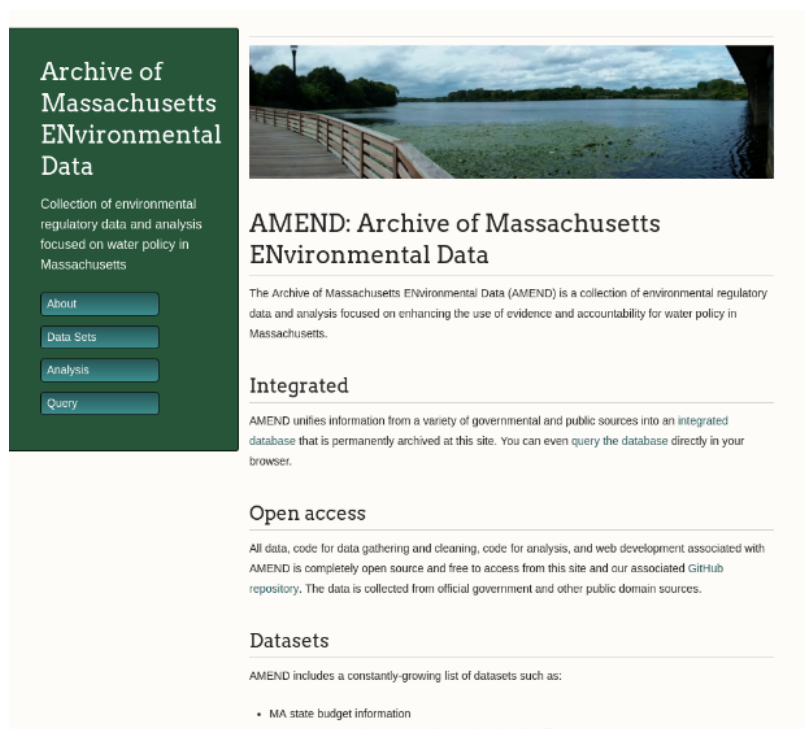


Figure 1. Screenshot of the AMEND website front page.

ing free software and hosted using low cost tools. The full list of open source tools used to construct AMEND are specified as dependencies in the codebase hosted at the AMEND repository (Sanders, n.d.); we will provide an overview here.

Development of AMEND takes place on a public *GitHub* repository at which any developer can inspect all source code and data associated with the project, review the history of changes to those files, contribute modifications as a pull request, or fork their own version of the site. The *GitHub Pages* feature oriented around the static site generator *Jekyll* is used to host the user-facing site. Only one element of the AMEND infrastructure, large file storage, has a direct cost. We use *Google Cloud Storage* to serve the integrated database file itself and other large datafiles.

Several *javascript* libraries are used for data interaction and plotting on the site. *Chart.js* is used to generate interactive line, bar, and scatter plots and *Leaflet* is used to display interactive maps. The library *sql.js* is used to enable interactive querying of the site's integrated database and *MathJax* is used to display mathematical formulas.

Multiple tools are used for data pre-processing. *Tabula* was used to extract tables from PDF files. The *python* libraries *numpy* and *pandas* are used for numeric data manipulation and analysis and *pystan* (Stan Development Team, 2018) is used to fit statistical models. *MapShaper* was used to convert town and watershed shapefiles into simplified polygons in geo-json format for efficient web display.

Upkeep of AMEND generally requires little maintenance. A single shell script is used to refresh the data sources integrated into the site and update all associated web pages and analyses. This procedure is vulnerable to changes in each of the data source repositories, for example HTML changes in scraped web pages and deprecation of API functions. As a result, some modification to data acquisition scripts may occasionally be required, and the refresh script cannot be automated to run on a schedule unless data source testing is also automated.

3.2. Features

The site is organized around three primary features:

- **Data:** An overview of the integrated database and individual pages describing each constituent data source with sample data tables and high level visualizations of the data.
- **Analysis:** Pages with analyses illustrating how to query, combine, and extract insight from the data within the integrated database. Each analysis page features descriptions of relevant findings each supported by interactive visualizations. See Section 4 for a detailed example.
- **Query:** A browser-based interactive query tool for executing SQL commands against the integrated

database. Some sample SQL queries are provided as examples.

3.3. Datasets

To date, we have integrated a variety of state and federal data sources, as well as data from other civic organizations, into AMEND. These include:

- Data assets from the EEA Executive Data Portal, including data on enforcements, facilities, inspections, permits, and chemical measurements for drinking water.
- Line-item level DEP budget data from MassBudget.
- Individual current and historical DEP staff records from the MA Office of the Comptroller.
- Detailed text descriptions of enforcement actions posted on the DEP website, with simple text processing performed to extract penalty amounts, municipalities, and topic information.
- NPDES permit documents and basic metadata for all states in US EPA Region 1 (New England).
- Ancillary datasets to support analysis like US Social Security Administration wage inflation data and US Census American Community Survey municipal-level population data.

Over time, we plan to continually expand the list of datasets integrated into AMEND. The addition of new data sources requires technical expertise, especially when those sources present challenges in terms of poor formatting or inconsistent syndication. However, the open source code developed for the above listed data resources provides supportive examples/templates for contributors seeking to incorporate additional data sets.

4. Analysis Case Study

The “Analysis” section of the AMEND website links to posts that illustrate the usage of the integrated datasets for policy analysis. The code used to generate each analysis from the AMEND database is available in the repository. In this section, we provide a detailed overview of our analysis of the distributional impacts of sewage overflows in Massachusetts. Visitors to the AMEND website can also find analyses of the impacts of declining DEP budgets on the agency's staff capacity and experience level and the correlation between state budgets and the volume and scope of enforcement actions undertaken by the agency.

The analysis of this section—and all others published on the AMEND website—can be reviewed, reproduced, modified, and extended by accessing the detailed statistical explanation (Sanders, 2019b) and the underlying data and code (Sanders, 2019a) published on the AMEND GitHub. These resources reduce the barrier for other stakeholders to produce their own independent analysis of the data assets integrated with AMEND to support

their own policy development and/or advocacy objectives. However, leveraging these resources and performing such analysis does require some level of technical competency and statistical knowledge.

4.1. *The Environmental Justice Movement*

Environmental Justice (EJ) is a global movement that seeks to create an equitable distribution of the risks, benefits, and decision-making power associated with environmental pollution, especially as these factors affect vulnerable communities (see Brulle & Pellow, 2006; Schlosberg, 2009, for recent reviews). In Massachusetts, an equal right to environmental protection is enshrined in the state constitution (Article XLIX; amended 1972), yet substantial inequalities persist across communities in the Commonwealth into the twenty-first century (Faber & Krieg, 2002).

Massachusetts has recently promulgated a new definition of EJ:

Environmental justice is the equal protection and meaningful involvement of all people and communities with respect to the development, implementation and enforcement of energy, climate change, and environmental laws, regulations and policies and the equitable distribution of energy and environmental benefits and burdens. (Massachusetts EEA, 2017)

This state policy identifies EJ populations according to any one of three threshold criteria applied at the Census block group level: that 65% of the households fall below the statewide median income (“Low income” criteria); that 25% or more of residents identify as non-white (“non-white” criteria); or that 25% or more of households have no member over the age of fourteen who speaks English only or very well (“English Isolation” criteria).

4.2. *Combined Sewer Overflows*

CSOs are discharges of raw or partially-treated effluent into waterways that occur when the flow through a combined sewer system (CSS) exceeds its capacity. CSSs are infrastructure common in older urban areas in the US constructed to carry stormwater and sanitary wastewater together through the same underground pipes. The EPA’s NPDES provides regulations and procedures for permitting, controlling, and mitigating the effects of CSOs. While NPDES mandates the elimination of CSO discharges during dry weather as a “minimum control,” dry weather discharges nonetheless can happen if the CSS is not functioning properly. More commonly, CSO discharges are prompted by heavy precipitation.

In 2004, it was estimated that 850 billion gallons of effluent is discharged annually from US CSO outfalls (see US EPA, 2004, for further background). Both CSOs and Sanitary Sewer Overflows, similar discharges from sani-

tary sewer systems, have recently been shown to lead to negative public health outcomes through an analysis of emergency room visits in Massachusetts (Jagai, DeFlorio-Barker, Lin, Hilborn, & Wade, 2017; Jagai et al., 2015). The public health hazard posed by these events is expected to increase as ongoing climate change increases the frequency and severity of extreme participation events (Patz, Campbell-Lendrum, Holloway, & Foley, 2005; Patz, Vavrus, Uejio, & McLellan, 2008).

4.3. *Combined Sewer Overflow and Environmental Justice*

We present an original analysis of the EJ impacts of combined sewage overflows, along with all data and code needed to reproduce the analysis, on the AMEND website (Sanders, 2018).

The EJ data used in this analysis comes from the US EPA EJSCREEN tool (US EPA, n.d.-a). Watershed and municipal-level EJ population characteristics are calculated by population-weighted averages over the Census block group-level data, with block groups assigned to watershed by comparison to geographic information system (GIS) shapefiles (MassGIS [Bureau of Geographic Information], 2017; US Census Bureau, 2017). Figure 2 shows the distribution of these characteristics across Massachusetts watersheds. The three urban watersheds of the Boston metropolitan area associated with the Boston Harbor cleanup (Dolin & Levy, 1990; Levy & Connor, 1992), the Charles, Mystic, and Neponset, have the highest levels of linguistic isolation as well as high levels of low income and non-white residents.

The CSO data used in this analysis was reported by the New England Center for Investigative Reporting (NECIR) based on their survey of New England CSO discharge reporting from calendar year 2011 (Struck, 2013). There have been substantial changes in population density, rainfall, and sewage infrastructure since 2011; however, more recent statewide or regional data is not available because there is not a standardized reporting system for these discharges (see Section 4.5) and the NECIR dataset is commonly cited (e.g., Wasser, 2019). The author explains:

All states are required to regularly monitor bacterial levels in their waterways. But the EPA says it does not compile public records of where and how much sewage flows into those waters. Each state is supposed to report that information, but the NECIR inquiry found the data is often incomplete, inaccessible, sometimes handwritten and sometimes based on little more than guesswork, undermining the public accountability built into the Clean Water Act. (Struck, 2013)

The NECIR dataset, archived at the AMEND website, documents the source for each CSO outfall discharge estimate, which generally originate from “draft” state

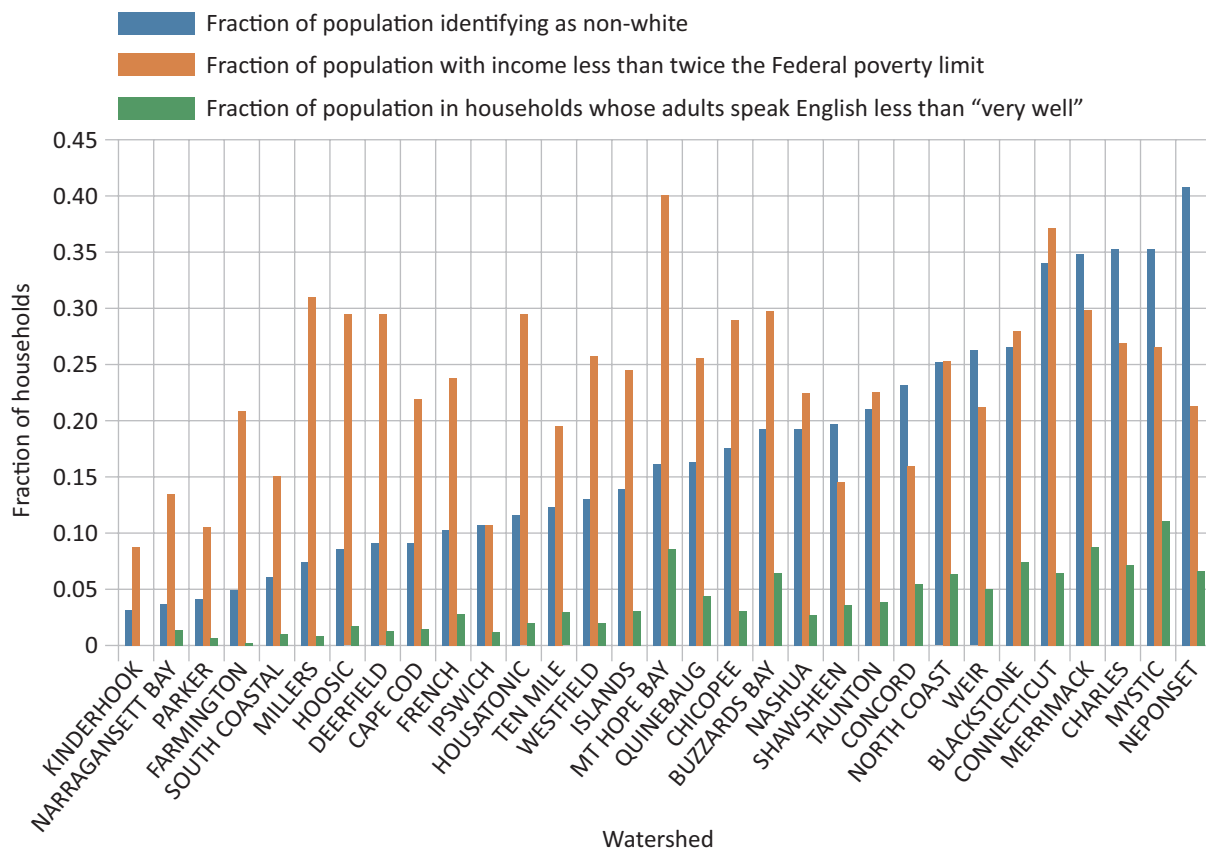


Figure 2. Distribution of EJ characteristics across Massachusetts watershed populations.

environmental agency reporting data, estimates based on models operated by municipalities, or regional utility operators.

Figure 3 shows the location of CSO outfalls in Massachusetts (points), with overlays showing the sum total

of CSO discharge volume in 2011 by watershed. The interactive figure on the AMEND website will also display discharge volume by municipality and Census block group and allows viewers to zoom, pan, and to click on each CSO outfall point to view information about its location,

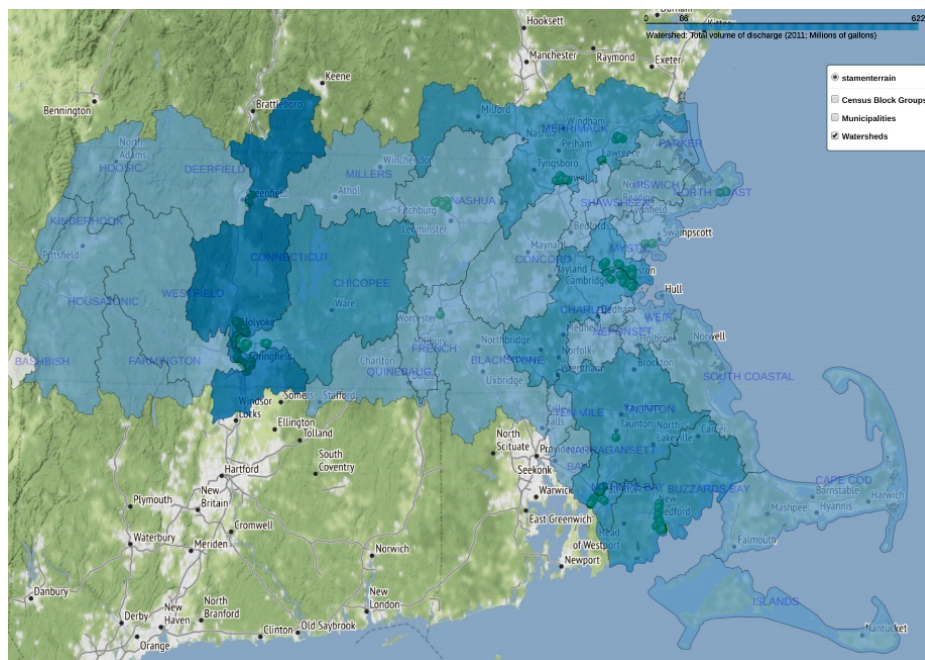


Figure 3. Interactive map of CSO locations and discharges per watershed and municipality.

discharge frequency, and volume. Similar maps on the AMEND website show the distribution of EJ communities across the state.

4.4. The Environmental Justice Consequences of Combined Sewer Overflow Discharges

We investigate the relationship between CSO discharge volumes and EJ population characteristics across all Massachusetts watersheds. We visualize the trend in CSO discharge volume by dividing the watersheds into four equal-sized bins according to each of the three EJ criteria defined in Section 4.1 and using bootstrap resampling to estimate the uncertainty in the population-weighted mean discharge volume estimate in each bin (Figure 4). We estimate the univariate dependence of CSO discharge on each EJ factor, and its 90% posterior (confidence) interval, with a simple population-weighted logarithmic regression model using a Bayesian methodology with weakly informative parameter priors (see e.g., Sanders & Lei, 2018) which is documented in detail on the AMEND website.

First, we explore the relationship between linguistic isolation and CSO discharge. The results suggest a statistically significant and high magnitude relationship between CSO discharge volumes and linguistic isolation. More linguistically isolated communities have much higher CSO discharge volumes on average. On average, watersheds that have twice the level of linguistic isolation tend to have 1.6 times (90% confidence interval 1.2 to 2.0 times) the level of CSO discharge (Figure 4a). The interactive version of this figure on the AMEND website has controls to show or hide the individual watershed points, which can be clicked to display detailed annotation.

Like the linguistic isolation trend, communities that are less predominantly white have much higher CSO discharge volumes on average (Figure 4b). We find that, on average, if a watershed has two times as high a concentration of non-white residents as another watershed, it will have 3.0 times (90% confidence interval 1.8 to 4.8 times) the level of CSO discharge.

Finally, Figure 4c shows the relationship between CSO discharge and income. Again, we find a strong and

significant relationship. On average, when a watershed in Massachusetts has two times as many people in poverty as another, it tends to have 3.2 times (90% confidence interval 1.9 to 4.7 times) as much CSO discharge.

4.5. Dissemination and Impacts

We conclude that CSO discharges in Massachusetts substantially overburden contemporary EJ populations; the legacy of centuries of inequitable distribution of polluting infrastructure. Regardless of the historical factors responsible, our advocacy seeks for the Commonwealth to take action to resolve this disproportionate impact on its most vulnerable communities. While EJ has been a foundational principle of civic action around CSOs, to our knowledge, Section 4.4 provides the first publicly reported analysis of the distributional impact of CSO discharges on EJ populations.

In particular, we have advocated for legislation (Campbell & Provost, 2019; Jehlen, 2019) that would require timely public notification of CSO discharges, as well as reporting to an online statewide CSO database that could be integrated with AMEND. The introduction of such statewide monitoring, reporting, and notification of CSO discharges would enable residents to be aware of the public health risks generated when CSOs occur and would enable scholars and policy analysts to further study their impacts and make informed recommendations to mitigate their ill effects.

The findings of Section 4.4 were first presented to the Massachusetts legislature in June 2018 as part of a legislative briefing about the issue of public notification for CSO discharges in Massachusetts. In addition to these results, the briefing included presentations by representatives of Massachusetts civic organizations (the Massachusetts Rivers Alliance, MyRWA, and Merrimack River Watershed Council) providing context about the nature and history of the CSO issue and an overview of a predecessor CSO notification bill (Jehlen, 2018) under consideration that session. That bill was eventually passed by the Senate and referred to the committee on House Ways and Means, but was not voted on by the House. In the months since that lobbying effort, there

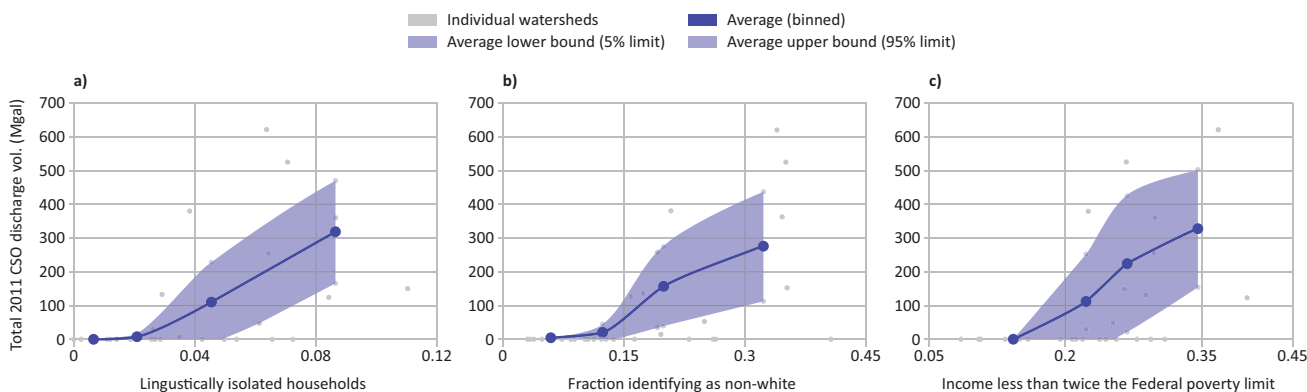


Figure 4. CSO discharge volumes versus EJ criteria across watersheds.

has been increasing public attention devoted to this issue in Eastern Massachusetts, highlighted by newspaper reports that cite the efforts of these water advocacy groups (Abel, 2018; Boston Herald, 2018; Eddings, 2018; Ottolini, 2018; Wasser, 2019). Most recently, the findings of Section 4.4 were submitted as written testimony to the Joint Committee on Environment, Natural Resources and Agriculture in April of 2019 as part of the first hearing for the bill in the current legislative session. This analysis and the AMEND web site are and will continue to be in use by our advocacy community throughout the legislative process surrounding this bill.

5. Theory of Communication

AMEND is located at the intersection of two prominent movements in the modern media sphere: data journalism and participatory journalism. The data journalism movement addresses how twenty-first century “data abundance, computational exploration, and algorithmic emphasis” (Lewis, 2015) manifest in the production and distribution of news (Coddington, 2015). The ability of individual advocates or small organizations to produce and publish reproduceable policy analysis based on public domain datasets can motivate and support journalistic inquiry (e.g., Section 4.5) and connects specifically to participatory and communalist journalism, whereby individual actors can contribute to the gathering, synthesis, and dissemination of news and information (Kligler-Vilenchik, 2018; Ruotsalainen & Villi, 2018). Optimistically, open source platforms such as AMEND can help to address the problem of consolidation of knowledge about the manipulation and distribution of news and content relevant to civic engagement among an “information elite” with control of proprietary media outlets and massive networks of followers (Robinson & Wang, 2018) and the differentiated capacity between resource-rich and poor organizations to pursue data journalism (Fink & Anderson, 2015). Open source data repositories make the tools of data gathering and analysis available to all individuals and organizations and lower the barrier to entry for their use.

Platforms like AMEND can interact with other digital technologies like social media to enable political participation. Many studies have established that engagement in discussion on digital and social media is associated (through practice and perception) with increased civic engagement of various forms (Anderson, Toor, Rainie, & Smith, 2018; De Zúñiga, Jung, & Valenzuela, 2012; Obar, Zube, & Lampe, 2012; Saldaña & McGregor, 2015; Valenzuela, Kim, & Gil de Zuniga, 2012). Social media has even been suggested as a primary mediating mechanism, among digital technologies, by which civic engagement among individuals is transformed into political participation (De Zúñiga, Copeland, & Bimber, 2014). Moreover, the two-way exchange of information and communication through online public forums, including social media, fosters trust between institutions and their constituents (Haro-de-Rosario, Sáez-Martín, & del Carmen

Caba-Pérez, 2018; O’Connor, 2017; Warren, Sulaiman, & Jaafar, 2014).

By serving to increase the availability of public data resources and to enable policy analysis, platforms like AMEND generate another type of two-way communication complementary to the online social discourse: a kind of emergent data transparency cycle. For example, the case study in Section 4 illustrates how a civic actor (journalists) collects data (CSO discharge volumes) from public agencies (water infrastructure operators) that has not otherwise been published, that data is shared back to the general public through their reporting, then captured and integrated into a public data repository (AMEND), combined with other data published by public agencies (environmental justice population statistics) and enriched (through geographic analysis), shared back to the general public through reproducible online publication (on AMEND), and then used to advocate for the collection, preservation, and dissemination of additional data resources through the formal political process of state legislation. However, this example identifies a possible difference between data repositories and social media as a mechanism for political participation. Whereas the participatory impact of social media is often identified to be focused on action outside of formal political processes (Leyva, 2017; Theocharis & Quintelier, 2016; Vitak et al., 2011), public data repositories may generally rely on (or at least more directly link to) traditional institutions and formal political processes including interaction with data-publishing public agencies and the regulatory process governing their data transparency.

In this way, a web resource like AMEND can be thought of as part of the “textualization” process (Kavada, 2016) by which social movements can advance ideas, theories, and concerns raised during public debates, hearings, comment processes, and other interactions with government agencies (as well as observations of ecological conditions, public health outcomes, and other interactions with the natural and civic environment) into stable patterns of information that can be inspected, shared, and built upon. Because external pressure is a common driver of increased transparency and data publication among governments (Wang & Lo, 2016), there is reason to believe that this kind of cycle—with a loop of action culminating in legislative advocacy or other policymaking appeals—can successfully and sustainably iterate over time.

Ultimately, resources like AMEND that seek to increase access to public data and its importance in informing the public policymaking process serve to change the configuration of political agency (Kaun, Kyriakidou, & Uldam, 2016) in the states where they are deployed. By extending the decentralization of political discourse and action to information about policymaking contexts and outcomes and providing new forums for communication about this information, public data repositories and open source analysis platforms can play a role in a communications-oriented perspective on defining politi-

cal agency in the digital age (Kavada, 2016) and promote the practices of active citizenship (Hammett, 2014) and proactive data activism (Milan & Van Der Velden, 2016).

6. Conclusions

We have proposed criteria for online data resources that can help to build trust in policy analysis between civic organizations, agencies, and the public. We have presented AMEND, one such resource targeted for the Massachusetts environmental community that is designed around these principles, and presented a case study of the application of AMEND to the analysis of the impacts of CSO discharges on EJ communities. Finally, we contextualized this work and the AMEND resource in terms of concepts in media theory, suggesting that public data repositories be viewed as tools for reconfiguring political agency with connections to the movements of data and participatory journalism.

Going forward, we plan to introduce several additional enhancements to AMEND including:

- Additional data assets, such as Clean Water Act Section 303(d), impaired waters, assessment data from US EPA; data extracted from MS4 permit annual reports; and additional US Census data characterizing the municipalities within Massachusetts.
- Additional analysis articles, including analysis of the distribution of permit age by watershed and municipality and the effects of variation in budget and enforcement on 303(d) assessment outcomes.
- Improvements to the usability of the site to enable application of its data assets by less technical, more diverse stakeholders, especially through interactive plotting features to allow users to visualize interactive SQL queries through a web interface.

The modular design of AMEND is meant to facilitate portability to other contexts. Using our published code, other groups can launch their own version of this resource tailored for other communities or policy domains.

Acknowledgments

The author gratefully acknowledges Patrick Herron, Tracy Olson, and all the members of the Mystic River Watershed Association Policy Committee, the attendees of the Poliinformatics 2017 and the Boston Area Research Initiative Spring 2018 conferences, and the anonymous editor and reviewers for their helpful feedback throughout this work.

Conflict of Interests

No funding was provided by any source to support the development of AMEND. Sanders is a volunteer member of the Mystic River Watershed Association.

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Article

‘Removing Barriers’ and ‘Creating Distance’: Exploring the Logics of Efficiency and Trust in Civic Technology

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Submitted: 31 March 2019 | Accepted: 12 June 2019 | Published: 6 August 2019

Abstract

Oriented around efficiency, civic technology primarily aims to *remove barriers* by automating and streamlining processes of government. While *removing barriers* is vital in many matters of governance, should it always be the aim of civic technology? In our ongoing ethnographic research to understand the work of community engagement performed by public officials in local government, we have observed how this orientation around efficiency in civic technology can inadvertently *create distance* in the relationships between citizens and governments. In this article, we discuss how an orientation around trust could open a space for civic technology that primarily aims to *close distance* in the relationships between citizens and public officials. We do so by first providing an account of how trust functions in the work of public officials performing community engagement, calling attention to where and when efficiency is at odds with the importance of relationship building between public officials and citizens. We build on ethnographic findings and a series of co-design activities with public officials to develop three strategies that operate under the logic of trust: historicizing engagement, focusing on experience, and mediating expectations. In all, by focusing on trust and the relational work of *closing distance*, civic technology can move towards addressing the growing crisis in confidence being faced in democracies.

Keywords

civic relationships; civic technology; community engagement; democracy; local government; trust

Issue

This article is part of the issue “Civic Organizations and Digital Technologies in an Age of Distrust”, edited by Eric Gordon (Emerson College, USA).

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1. Introduction

This article draws from our experience leading one of the Citi Foundation’s Living Cities City Accelerator cohorts in the city of Atlanta, Georgia. The City Accelerator program provided financial support and supervision to assist city governments in pursuing projects to improve the quality of life for residents with a focus on community engagement the year Atlanta participated (Living Cities 2015). The goal of the Atlanta project which ran from 2016 to 2018 was to examine and re-imagine how the work of community engagement occurs within the city, and to do so the Mayor’s Office, partnered with

us, Georgia Institute of Technology’s Participatory Publics Lab, along with the Atlanta Housing Authority, and a local non-profit the Westside Future Fund (Asad, Le Dantec, Nielsen, & Diedrick, 2017). Our role was to lead research efforts which involved collecting interviews from community members and public officials, as well running a series of co-design activities in order to develop insights for improving the work of community engagement throughout the city (Corbett & Le Dantec, 2018a, 2018b).

It is within this work we observed two logics: one of *efficiency* and one of *trust*—each of which provide a distinct orientation for civic technology. To understand these logics, consider the following perspectives of

ATL 311, a website and mobile platform for fielding service requests, uncovered during our interviews with public officials from the Department of Public Works and a City Council member:

We get feedback from the system [ATL 311], which is the heaviest utilized tool for customers to relay their needs to us. And in terms of us turning those requests into deliverable services, we track our efficiency and our responses and we do it on a daily, weekly, and monthly and annual basis, so that we can make sure our resources are aligned in the right places to meet our established minimum levels of service. (Public Works)

When people touch their government that way [using ATL 311], I think that's really super cool. The one challenge for us is...it deprives us of information about what people are caring about in the district...one of the things that is true about the council offices before the arrival of the app is that we were very basic constituent service...my water bill is wrong. Help me correct my water bill. There's a pothole. I need the police. (City Council)

In this case, using technology to improve the transactions of service delivery in one department comes into conflict with the relational work in another. Driven by the logic of efficiency, the value of ATL 311 for Public Works is in how the system *removes barriers* to service transactions. Using technology to remove barriers is the dominant mode of civic technology pursued across the major public, non-profit, and business leaders (Gordon & Walter, 2016). On the other hand, the perspective from city council points to the logic of trust reflected by the concerns of how the system *created distance* in his relationships with constituents by removing points of contact. This raises a series of questions: do opportunities for contact—even through the mundane work of being able to solve a problem with a water bill or fix a pot hole—provide the building blocks for civic relationships? Do the inefficiencies of personal interactions provide the relational and affective support necessary for broader participation in governance? Does the distance created in this instance eventually lead to policy that is also distant?

The above example typifies what we call the trap of *removing barriers* and *creating distance*: the unintended result of unbridled pursuits of efficiencies by civic technology. According to Gordon and Walter (2016, p. 244), the danger of this trap occurs “when the application of technology to civic life is celebrated purely for its expediency, transactionality, and instrumentality, then *other uses* and users are potentially sidelined” (emphasis added). In this article, the ‘other use’ we explore is the relational work of *closing distances*. Driven by the logic of trust, closing distance primarily aims to develop relationships between public officials and citizens. We detail this logic drawing from ethnographic findings and a series of

co-design activities conducted with public officials during the Living Cities-supported project in Atlanta. Based on our findings, we argue that in order to address the growing crisis in confidence, civic technology needs to operate from the logic of trust. Subsequently, we provide three strategies to achieve this: historicizing engagement, focusing on experience, and mediating expectations.

2. Background

2.1. Crisis in Confidence

The Living Cities project focused specifically on Atlanta's westside communities—five historically African American neighborhoods bordering west of downtown. Through the 1930s to 1960s the westside of Atlanta was a vibrant community known throughout the country as the hub of the powerful Civil Rights Movement (Keating, 2010). However, the community began to decline during the 1970s from a combination of suburbanization and white flight. Those changes were followed by disinvestment in infrastructure and social services in the 1980s, and then the drug epidemic of the 1990s (Etienne, 2010; Kruse, 2013). Over the last three decades, two consecutive sport stadia were built for the city's professional American Football team: the Georgia Dome was completed in 1992, replacing the Fulton County Stadium on the same site; and the Mercedes-Benz stadium was completed in 2017 adjacent to the Georgia Dome (which was subsequently demolished). The construction of the Georgia Dome ignited a sense of excitement and promise of new opportunity in the community in the early 1990s; an excitement which was short lived. According to Bruce Deel, a pastor and the CEO of City of Refuge, a homelessness nonprofit active in the area: “We just didn't really see the positive impact...we saw a new building go up and a lot of people get pushed to the edge of our neighborhood” (Garlock, 2014). This history was fresh in mind while the Mercedes-Benz stadium was being constructed according to Lloyd Hawk, CEO of a Historic church in the community (which was eventually demolished and relocated as a result of the Mercedes-Benz stadium): “Twenty-one years ago when they built the first stadium, there was money committed to the neighborhood...But if you go through the neighborhood now, you'd have no idea” (Garlock, 2014). Given this history, the development of the Mercedes-Benz stadium set off a contentious battle between the city and the community to secure a robust community benefits agreement guaranteeing various improvements to the area (Leslie, 2014). However, no such agreement was reached and the entire process lacked meaningful community engagement, further fraying the fabric of civic relationships between the city and the westside (Diedrick & Le Dantec, 2017).

The events in the westside communities of Atlanta present a local instance of what can lead to a “crisis in confidence” which is characterized by a deeply rooted

antipathy toward both public officials and opportunities for participation in governance (Levine, 2015).

Unpacking the larger crisis being faced by democracy around the world is beyond the scope of this article; however, at a high-level its sources are many and have built over time: limitations of the state in the context of globalization (Held & McGrew, 1993), enduring income-equality (Uslaner, 2002), and increased skepticism toward expertise are just a few sources (Vigoda-Gadot & Mizrahi, 2016). Taken together, these issues produce increased uncertainty and risk in society (Beck, 1992). Indeed, the stadium developments exemplify such uncertainty for the communities involved given the scale of the potential social, economic, and cultural impacts to the adjacent neighborhoods. In the face of this uncertainty, why should westside residents expect the city would act in their interests with regards to this matter? Consequently, when “citizens cannot understand nor effect their government” then “limiting it and ignoring it becomes a rational response” (Levine, 2015). As a result, *distance* is created in the relationships between the public and their representatives. In this way, distance can be viewed as the precursor and the progenitor of the crisis.

2.2. Distance

While many currently view distance and its corollary distrust as a crisis of modern democracy, both distance and distrust were foundational guiding design values of liberal democracy. Fueled by the distrust of the traditional power structures of the monarch and sovereign, liberal democracy relied on mechanisms to limit the discretion of those in power (Held, 2006). At the same time, liberal democracy was also very much distrustful of direct citizen control of government (Madison, 1788). Thus, the trade-off between distrust of those in power as well as distrust of direct citizen participation produced a representative system in which citizens legitimize a government of divided powers but remain outside of—and thus *distant* from—that government (Urbinati, 2006). It is also worth mentioning how this distance is experienced differentially across racial and social class lines as “privileges of wealth, status, and family background pave the road to political power, while disadvantages of class, gender, and race erect hurdles” (Young, 1999). African Americans in particular have experienced the most violent and systematic distancing from their government; beginning with the fundamental social distance imposed by the three-fifths comprise (Ohline, 1971), to the spatial distance created by segregation of Jim Crow’s “separate but equal” laws (Woodward, 2002), to the distance in economic power perpetuated by discriminatory loan practices, inadequate access to education, and work-place discrimination (Oliver & Shapiro, 2013). That being said, the crisis in confidence cuts across race and class lines (The Aspen Institute, 2019; Vigoda-Gadot & Mizrahi, 2016) and is forcing governments to re-evaluate the foundational roles of distrust and distance in representative democracy.

While a certain level of realistic political distrust has always been good, almost essential for democracy (Hardin, 1999), the source of distrust in the crisis stems from “alienation that leads to the inability to expect competence or fiduciary responsibility, or negativism, or irrationality [which] is not healthy for a democracy as leaders need at least some grant of trust to govern effectively” (Barber, 1983). Therefore, while distrust is functionally equivalent to trust as a social control mechanism for democracy, the crisis is causing it to be overdrawn. This is problematic as the operating cost of distrust is far more taxing socially, cognitively, and emotionally as:

Distrust tends to absorb the strength of the person, making life more difficult, to an extent which leaves little capacity to explore and adapt to his environment in an objective and unprejudiced manner; hence allowing for him fewer opportunities. (Luhmann, 1979)

Quite the opposite of trust as a social control mechanism, which is said to improve the overall function of government by enabling greater willingness to compromise on issues, increasing the ability to enact major legislation, as well as afford stronger commitments to less fortunate people (Uslaner, 2002). From this perspective, addressing the crisis requires more than immediate effort towards resolving any one particular source of distrust. Rather, it calls for a rethinking of the very nature of the relationships between the public and their government. In particular, the *distance* representative systems necessarily place between citizens and their representatives.

In this vein, we can view the goal of the City Accelerator project as a local attempt at addressing distance in how the project pursued developing a more collaborative and equitable way for the city to do the work of community engagement (“Atlanta Community Engagement Playbook”, 2018). The project reflects what many in political science consider to be an important way to address the crisis: for public officials to “go out and get democracy” through the work of community engagement (King, Feltey, & Susel, 1998). Understood as a mechanism for sharing power with the public (Roberts, 2015), community engagement differs from political participation—which refers to voting or volunteering for a political party—and from the civic engagement that Putnam used to describe how citizens harness social capital to collectively address issues (Putnam, 1995). Rather, community engagement is a collection of practices performed by public officials to meet and invite the public into the process of governing (Corbett & Le Dantec, 2018b).

3. Exploring the Logic of Trust

During our research in the Living Cities project, we conducted 48 semi-structured interviews with public officials across 30 departments and agencies throughout Atlanta’s City Government. Our interviews centered on how these public officials describe how they perform

the work of community engagement and role of trust in that work. Each interview lasted roughly an hour and was recorded and fully transcribed. The interview transcripts were subjected to a grounded theoretical analysis (Charmaz, 2014)—first completing open-coding of the data followed by focused coding to pinpoint and develop salient categories. For the purposes of our argument here, we limit our discussion to three categories within our findings that are illustrative of the logic of trust: the work public officials undertake to build civic relationships, how distance and trust factor into that work, and how we can understand distance in regard to civic technology use.

3.1. Building Civic Relationships

We begin by discussing the work undertaken by public officials to build civic relationships which exposes the logic of trust within the wider landscape of community engagement. To illustrate, the director of a city-wide project that is meant to transform many neighborhoods with access to green space, transportation options, and affordable housing reflected:

We believe we are a new neighbor. We move into a part of the project that we haven't been before, we're now a neighbor because we're not going anywhere. We're there for the long haul. So, as a new neighbor, how can we get to know our neighbors?

As their work of building this new infrastructure takes them from neighborhood to neighborhood, they recognize they lack relationships with residents who may be uneasy about the coming changes. To address this gap, the director talked about building relationships in a proactive manner:

We host a Saturday, anybody-come kind-of event and people come with their kids, their grandkids. They hang out with us...we tell them what we're working on and give them a chance to talk to us about what we're doing and how it affects them.

Hanging out on the weekends becomes a tool for establishing a relationship. The goal of these sessions was not to advance the plan, but to build relationships and provide a human access point into the municipal operations responsible for the city-wide project. The Director's approach emphasizes the importance of trust and direct, personal contact between municipal officials and the public to whom they are accountable.

Building relationships often requires empathizing to understand the nuance in feelings and emotions connected to an issue, rather than just recording the facts or collecting responses from a survey or opinion poll as illustrated in this remark by a public official in economic development:

A lot of stuff that happens down here is so nuanced that I don't think I'd ever get away from wanting to talk to somebody directly and get a sense of how they felt about something, not just the facts about it.

The nuance of felt experience points to how the affective qualities of community engagement are predicated on building relationships and connects to how people articulate attachments to issues and begin to work collectively toward political outcomes (Le Dantec, 2016). As an example, a public official in city planning noted that when working with residents to get input on proposed plans:

Most of the time these conversations are very emotional conversations, because there are real systemic issues that have plagued most of these communities for a long time. And yet, there's consensus around what needs to be changed. However, there's also the fear that when things change, will I even be able to stay here?

The emotions, fears, and concerns expressed about gentrification and displacement as a consequence of urban renewal play against a desire to see the area in question improved. Understanding local histories and knowledge is very important in these instances which requires taking the time to listen to residents to legitimize concerns.

3.2. Trust Work and Distance

We found each public official's approach to building relationships differed: from formal public meetings in the case of planners with clear lines of accountability, to informal weekend gathering in the case of public-private development partnerships trying to build good will. Looking across the themes in these approaches, we developed the notion of 'Trust Work' to describe the role of trust in building relationships (Corbett & Le Dantec, 2018a). We identified eight practices of Trust Work which all pursued a unifying goal: to close various manifestations of *distance*. To explicate this theme of distance, we turned to the social psychology literature which has described distance as the subjective experience that something is far or close to oneself (Trope & Liberman, 2010). Distance research tries to understand how different perceptions of distance impacts behavior and decision making across various social situations (Maglio, Trope, & Liberman, 2013; Trope & Liberman, 2010). We leveraged this literature and connected to trust through how uncertainty grows with distance as "something becomes increasingly distant there are more and more possible states in which that something will not materialize" (Maglio et al., 2013). Whether something will materialize (or not) gives rise to the need for trust as trust is a mechanism for dealing with the uncertainty distance introduces.

We used this conceptualization of distance as a lens in our analysis of the role of trust in the work of commu-

nity engagement (Corbett & Le Dantec, 2018a). We argued each dimension of distance (social, temporal, hypothetical, spatial, knowledge, power) between public officials and citizens presents uncertainty that trust needs to overcome. To illustrate, the work of community engagement in city planning often needs to overcome distance in the form of knowledge of planning procedures. Left unchecked, this distance leads to information asymmetry between planners and city residents that produces uncertainty (and risk) that in turn undermines opportunities for community engagement. In order to enable meaningful community engagement, city planners need to close this distance in knowledge by working to make planning procedures accessible for city residents.

3.3. Distance and Civic Technology

With the logic of trust now exposed, we can use it as a lens to understand how different civic technologies mediate relationships between public officials and citizens. For the purposes of this article, we will focus on civic technology designed with government as the intended customer or user which includes bespoke systems like ATL 311, more specialized applications like Cycle Atlanta (Le Dantec, Asad, Misra, & Watkins, 2015), and also general purpose social media platforms appropriated by government (Kavanaugh et al., 2012).

There were many ways civic technology factored into the work of community engagement we examined during the Living Cities-supported project in Atlanta. Whether as a tool to manage communication or enable service interactions, different purpose-built and commercial software platforms were critical to getting the work done. Often, the desire for technology was based in a need to make work more efficient. However, efficiency can be at odds with the logic of trust which requires awareness, relationships, and shared responsibility; all of which take time to develop. To illustrate, one city council person noted:

Internet technology can help you get the information quicker, but being in front of someone, being able to see these emotions, get a hug, get a handshake, eat over some bread and some food...that's going to get you a little further.

The observation here is rooted in the logic of trust that comes from being an elected official and highlights how civic technologies are interpreted as transactional tools for information and service exchange, rather than tools for establishing connection within constituencies. Being able to convey and experience emotions through affective interactions “get a hug, get a handshake, eat over some bread and some food” exemplify the Trust Work practice “meeting people where they are” (Corbett & Le Dantec, 2018a). This practice closes spatial distance by eschewing spaces of institutional authority in favor of interacting in familial social places of constituents. The

space of interaction is important for trust, as trust is easier to develop in conditions of social and spatial proximity (Barber & Gambetta, 1992). Moreover, the effort by public officials to ‘meet people where they are’ conveys the desire to develop relationships as well as ownership of the distances present. This effort is often lost on use of internet technology which obviates both time and space, yet time spent in space is the currency of closing social distance.

Using civic technology always involves weighing the tradeoff between the logic of efficiency and the logic of trust. A public official in the city housing authority described this in her contrast of social media use vs face-to-face interactions, “I do think that, while social media can be great and mailings can be great, that one-to-one relationship is really the most key, the most important.” Similarly, a public official working in the city’s economic development department speculated on the use of virtual meetings to cut down on time and labor in community engagement, “could we use technology to meet instead? What if we’re able to have that same meeting, cut down your travel time, cut down the cost for food, things of that nature, get cut straight to the chase.” In the face of limited staff and budgets, civic technology could improve both Trust Work and participation by allowing opportunities for interaction in a more efficient manner which would lead to greater sustainability by *removing the barriers* of time, space, and money. However, the logic of trust needs to be considered in order to avoid the trap *removing barriers and creating distance* by disrupting the affective qualities of face-to-face modes of community engagement.

4. Designing Strategies for Closing Distance

To better understand how to avoid the trap of removing barriers and creating distance, we engaged 13 of the public officials from the Living Cities project through a series of design activities to develop strategies that could inform how civic technology might be orientated around closing distance. Our overall approach drew from co-design methodology (Sanders & Stappers, 2008): a design practice that aims to leverage those who will eventually be served through the outcomes of a design process by affording them the position of ‘expert of his/her experience.’ In our case, the ‘experts’ are public officials; therefore, we designed an activity which provided tools for them to explore the role of trust and technology in their work of community engagement. To do so, we designed a set of materials that required the public officials to explore how they might overcome common barriers to developing trust in their community engagement work. The workshop activity required participants—working individually—to think through how they would approach building trust in a specific goal they would like to achieve in their community engagement work. To achieve these goals, the activity required them to match together three forms of prompts derived from elements of our previ-

ously developed conceptual framework of trust in community engagement (Corbett & Le Dantec, 2018a): *barriers* to trust, *actions* to overcome said barriers, and different forms of *technology* they might operationalize to help with the process. In sum, during the workshop each participant worked individually on reaching their goal by thinking through how to build trust by matching the barriers they felt were relevant—to actions that would address those barriers—and finally technologies they have access to (or envision having access to) that would aid their process. This allowed us to get a wide view of how public officials across a range of municipal roles address barriers for trust in their goals of community engagement.

Each workshop ran concurrently in three sessions over the course of two weeks. Each session was approximately two hours and took place on our campus. One researcher recorded ethnographic fieldnotes and photo documentation while the lead author ran the workshops. We also audio recorded the workshops which we then partially transcribed to provide additional fidelity to key exchanges identified in our ethnographic notes. We subjected the data from these workshops (how participants worked with the materials, observational field notes, photos and audio) to a thematic analysis (Miles, Huberman, & Saldana, 1984) which produced three strategies: historicizing engagement, focusing on experience, and mediating expectations. Discussing these strategies offers us a comparison with the logic of efficiency from which we can identify differences and thus further outline the contours of the logic of trust.

4.1. Historicizing Engagement

We developed the first strategy, *historicizing engagement*, by analyzing how public officials articulated the work necessary to develop empathy and understanding of past experiences in order to build relationships. For instance, an official in public safety described how his department must contend with how “many people have past experiences where crimes have been committed against them or family and friends that they feel were not taken seriously.” He pointed to the importance of having personal conversations throughout these communities to develop empathy and sensitivity with these past experiences of injustice. Likewise, an official in community health described the necessity of “being prepared to go slower and/or move away from the agenda when necessary” in his agency’s work of overcoming the history of negligence that underserved communities felt towards outsiders who alleged to work benevolently but, in the end, used engagement to further their own agendas. Slowing down and providing opportunities for shared decision-making to set the goals of projects around (and in response to) history were important for his department’s goal of involving communities—some which are very uneasy due to the history of health inequities in the city.

Engaging with history came to be a major theme throughout the workshops. Officials wanted to understand how to best attend to the memories, emotions and experiences of the past that pose barriers for trust in the present. From the standpoint of trust, there was an understanding that a key part of trust as a process is overcoming fear and doubt that may stem from negative past experiences. This finding further exposes the logic of trust from which we developed the strategy—*historicizing engagement*—which signifies that the process of closing distances must be grounded within the history that has produced them.

Historicizing engagement conflicts with the logic of efficiency in how it requires time and patience for the affective work of engaging the past to unfold. In contrast, civic technology is most often associated with the discourse of “moving forward,” “innovating,” and “reaching for the future” (Schrock, 2016). There is an urgency in this discourse to remove the barriers of history—which are often linked to inequity, broken promises, and distrust—all of which can hinder “progress.” Confronting this discourse, historicizing engagement calls for civic technology to actively engage history by exploring how past experiences can be brought to bear on current systems and processes. Doing so is vital for closing distance and developing relationships because trust as a process will always be forged upon past experiences which serve as the raw material for forming expectations that overcome uncertainty (e.g., the history of broken promises regarding the stadiums in the westside communities of Atlanta).

4.2. Focusing on Experience

We developed the second strategy, focusing on experience, by analyzing how public officials went about addressing issues they face with providing meaningful and enjoyable community engagement experiences. For instance, a regional planning official was concerned with avoiding transactional engagement experiences:

Agencies can get a bad rap for only engaging communities when they must put together a periodic plan for funders, etc. Agencies can be seen as disingenuous or inauthentic if they only engage communities in these 3 or 4 year intervals.

Engagement can feel transactional when it occurs only to satisfy institutional needs rather than the needs for ongoing relationships with the communities that they serve. Another official working in parks and recreation remarked at how the experience of engagement is typically too narrow as citizens are given limited agency in the larger picture of how decision-making processes play out. He believes this leads communities to devalue participation resulting in one-off engagements that ultimately reduce input because people participate once but never return.

Improving the experience of engagement came to be a major theme throughout the workshops. What en-

tails a 'good' experience differed significantly based on the domain of the official (e.g., public safety vs infrastructure maintenance) but overall there was a commitment to explore ways of doing engagement that take the experience of participating as a central goal. From the standpoint of trust, there was an assumption that improving the quality of experience of engagement was vital to enabling ongoing interactions which are the building blocks of trust. This finding further exposes the logic of trust from which we developed the strategy—*focusing on experience*—which signifies that distance is closed as trust develops over time through the accumulation of experiences.

Focusing on experience conflicts with the logic of efficiency in how it pushes back against the tendency towards transactionality in civic interactions. Indeed, engagement is often treated as a requirement—a pro forma obligation, rather than a worthwhile experience in of itself (Gordon & Baldwin-Philippi, 2013). Moreover, when civic technology does focus on experience, it tends to do so under the guise of “customer experience” adapting the private sector discourse of “running the government like a business” (Dutil, Howard, Langford, & Roy, 2008). While improving the quality of experience in receiving services from the government is important (as ATL 311 does), equally important is the quality of the experience of participating in the decision-making processes of government. As such, *focusing on experience* calls for civic technology to focus on how the experience of engagement can be made enjoyable, creative, and productive for those involved. Doing so is vital for closing distance and developing relationships as trust as a process develops over time only through the accumulation of experiences; it is both the opportunity for and quality of experience that eventually reduces distances (e.g., opposite the poor experiences of community engagement in the westside communities of Atlanta).

4.3. Mediating Expectations

We developed the third strategy, mediating expectations, by analyzing how public officials went about building and maintaining expectations with communities during community engagement. To illustrate, an official working in infrastructure development described the challenges with maintaining expectations in his work which can operate on a timescale of decades. He describes how this “can be a frustration that change isn’t coming fast enough...” In this case, the immediate needs of engagement are out of step with the longer term economic, social, and cultural ramifications of the work which in turn can problematize political will and institutional relationships. Similarly, an official working in public safety wondered if a data visualization might be able to aid in “give[ing] the community hope...something to look forward to” regarding ongoing efforts to address systemic crime in an area. He described how the police department would first need to provide the basis for positive

expectations with the residents about how they would address the issues being faced and inviting community members in to set goals and then follow through with maintaining these expectations by working with the community as the work unfolded.

Supporting expectations came to be a major theme throughout the workshops. Officials wanted to understand how expectations could be enabled to sustain the community engagement necessary to reach goals in the face of uncertainty. From the standpoint of trust, there was an understanding that expectations in community engagement are often fraught and tenuous over time; as promises are made (and sometimes broken) the positive expectations that undergird trust become unstable. This finding further exposes the logic of trust from which we developed the third strategy—*mediating expectations*—which signifies that supporting the expectations that form around the work of community is vital to closing distance.

Mediating expectations conflicts with the logic of efficiency in how it pushes back against the tendency towards expediency in how expectations are mediated in civic interactions. The most popular approach of mediating expectations in civic technology are open data systems. These systems are intended to remove barriers to information and provide a common understanding and expectations of a civic processes or services (O’Hara, 2012). The expediency of these systems can be understood through an earlier quote by the public official in economic development who described the need to “get a sense of how they felt about something, not just the facts about it.” Open data mediates expectations through “facts” yet trust and the expectations that underlie it will always be more than the accumulation of facts. While facts are important, equally so is the “sense of how they felt about something” as trust is a unitary social experience derived from cognitive, emotional, and behavioral dimensions (Lewis & Weigert, 1985). The social experience of trust is further lost through how open data initiatives often take a top down approach—where public institutions decide alone what to release and what not to—thereby limiting where and what expectations can be mediated (O’Hara, 2012). As such, these approaches obviate the agency and relational scaffolding of the trust work that provides the basis for expectations. In contrast, the strategy mediating expectations calls for civic technology to engage the importance of agency and affect in how expectations are built and maintained. Doing so is vital for closing distance as trust as a process is fundamentally about how expectations can be formed to enable cooperative action in the face of uncertainty (e.g., attending planning meetings during the uncertainty of the second stadium’s development).

5. Conclusion

Neither the local crisis in confidence in the westside communities in the city of Atlanta nor the larger crisis in con-

confidence in democracies around the world will be solved through increasing efficiency of institutions by creating systems like ATL 311. Yet, that is not to say the logic of efficiency is always inappropriate in matters of governance. In fact, there are cases where efficiency is vital. For instance, in the work of the civic technologist Jazmin Latimer during her time at Code for America. Efficiency was the primary goal of the online platform “Clear My Record” she designed: a tool allowing legal-aid providers to reclassify convictions more efficiently which helps low-income Americans lift legal restrictions that threaten their physical and mental well-being (Latimer, 2016). Rather, efficiency is only problematic when it is unbridled, when it becomes an all-encompassing neoliberal logic that prefigures design and use of civic technology. This becomes particularly problematic in situations where efficiency is not always desirable; for instance, when the higher priority is assuring that a community’s voice is heard, that a process is fair, or that the most vulnerable are able to safely express themselves. If the technologies we design in the civic space are only concerned with efficiency, the ability of public officials to engage publics that are most distant will be constrained as public officials are also at the mercy of the systems that get deployed within their work environments (i.e., the city council person grappling with the impact of ATL 311).

The decisions about the technologies we design and use in the civic space structure social and political relations as Langdon (1986, p. 49) once remarked:

[As] our society adopts one sociotechnical system after another it answers some of the most important questions that political philosophers have ever asked about the proper order of human affairs....What is the best form of political society?

According to the logic of trust “the best form of political society” is one which works towards closing different manifestations of distance between the public and their governments: distance in power of decision-making, distance of spatial and social closeness, temporal and hypothetical distance in reaching civic goals, and distance in knowledge of civic processes. To achieve such a society we will need to answer Winner’s crucial question (1986, p. 53): “what forms of technology are compatible with [this] kind of society we want to build?” While we can not yet answer this question, the Trust Work we described and the strategies we offered provide the conceptual seeds to guide civic technology towards operating from the logic of trust.

Acknowledgments

We are grateful to our partners with the City of Atlanta, Atlanta Housing Authority, and the Westside Future Fund. This project was supported by Living Cities and the Citi Foundation, and the NSF under grant IIS-1524380. We would also like to thank Andrew Schrock and Carl

DiSalvo for their valuable comments and helpful suggestions for this article.

Conflict of Interests

The authors declare no conflict of interests.

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Media and Communication (ISSN: 2183-2439)

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