

Community Historians: Scaffolding Community Engagement through Culture and Heritage

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ABSTRACT

This paper describes the Community Historians project, which was a series of public, participatory workshops focused on conceptualizing and enacting forms of citizen engagement through technology. The goal of the project was to provide the space and resources to discover, discuss, and document inherent communal values and tangible resources present in a low-income community. The result of the first workshop was an interactive, alternative asset map of the area. The second workshop involved residents building their own digital cameras from component parts. The purpose of these activities was to reinforce critical thought about how technology affected the lives of residents and to empower adaptation of technology as a tool for communal development.

Author Keywords

Civic Engagement; Community Informatics; Participatory Design; Publics

ACM Classification Keywords

H.5.m Information Interfaces and Presentation: Miscellaneous.

INTRODUCTION

Recent research under the banner of Urban Informatics has renewed an interest in the impact of technology on local communities (e.g. [1,6,36]), but the history of community-focused technology is much longer [7]. For example, Santa Monica, California created the Public Electronic Network (PEN) in the 1980's as a system to help bridge the divide between the homeless and housed [38]; other systems like HomeNetToo [24], the Creating Community Connections system [37], and the Netville network [20], explored the ways different technologies could support community goals, develop group efficacy, and empower individuals to act within their communities.

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While these examples focus on the role of purpose-built systems in community contexts, the need for specific design approaches is equally, if not more important. One approach to doing design in community settings is to develop participatory practices that engage community members from the outset [3]. Carroll, in particular, makes the case for participatory design in communities because those affected by a technology should have a say in its design, both as a moral safeguard against paternalism and as a pragmatic tactic as community members will be best positioned to inform the design process [8].

In this paper, we present work done in collaboration with a neighborhood cultural arts organization. We developed a design intervention to explore community members' use of technology to support community engagement. Our work contributes to a growing body of interaction design literature that argues for the empowerment of community members by developing a design process that enables them to articulate community engagement via their desired outcomes [8,22]. In these settings, design researchers first let community members define what they consider engagement and then work with community members to co-design workshops that focus on addressing elements of relevant civic action through the design activities. In our work presented here, we had to confront differences in our understanding of relevant community engagement from those of our community collaborators, and we had to work closely with our partners in the planning stages of the project in order to develop a series of design interventions that would be relevant to the community.

The resulting workshops used two different forms of digital photography to document and reflect on the community. In line with other recent photo elicitation work in HCI (e.g. [9,28,32]), we chose to utilize photo sharing as a way of emphasizing the "respondent's voice in expressing values and value judgments, mitigating the assumption of researcher as authority" [28]. The first workshop used iPhones as a tool for taking geo-located photos so that community members could record their experiences in the neighborhood; the second workshop was structured around the creation of Arduino-based digital cameras and challenged community members to consider community documentary activities in the context of automated remote sensing and surveillance. In both workshops, issues of individual agency, voice, and empowerment informed the activities. In particular, we were concerned with the ways in

which the produced content in the workshops was captured and communicated outward.

Our experience in developing the project shows the opportunities for engaging in community-led design where the participatory design begins with planning design interventions themselves, and not just the running of the design encounters. We use this to explore both the role of creating technology to support community desires, but also the role of design activities to articulate assumed common issues and attachments within a community.

BACKGROUND

The increasing prevalence of information technology means that people are expected to have access to and familiarity with myriad different devices—from personal computers, to digital cameras; social media, to SMS. This pervasiveness has allowed great progress with respect to data storage, retrieval, and personal connectedness, but there is a less-visible social cost where socio-economically disadvantaged groups are rendered even less visible by the very systems that are promoted to support democratized participation [5].

In order to address these tensions, the Community Historians project used a series of technology design workshops to critically examine community power dynamics. Our concern was with how technological systems materialize with more diversity in the perspectives of those doing the designing—in particular, when design contributions come from disenfranchised communities who are not typically empowered to voice their opinions, let alone create their own systems or devices. Through the workshops, we explored how different forms of interactive technologies and digital device creation empowered residents to articulate and perform community identity, with the goal of developing broader community engagement.

Values in, and of Design

The exploration and performance of community identity explicitly drew on a legacy of thought on the role of values in design. One of the central considerations within this body of work is the idea that when things are designed, built, deployed, and used, they take on different meanings at each step. Since people possess different values, and because those values develop and change over time, attempting to construct systems or products with universal, or even stable associations to human values is problematic: the interpretation of artifacts and the ways they shape, or are shaped by human values is dynamic. As an example, the now ubiquitous parable that highway bridge-height was informed by a bigoted desire to prevent African Americans and the poor from gaining access to beaches on Long Island becomes something altogether different through an alternate analysis and interpretation of engineering and zoning norms of the day [25,43].

Instead of focusing on human values as apparent things—such as democratization, solidarity, heritage, and cultural identity—we aimed to bring out the values that were important in the current context for the people involved. Such a perspective draws on approaches like Value Sensitive

Design, where an iterative and explicit consideration of values is used to ensure a reflective engagement with the values of “direct and indirect stakeholders” [19]. However, following critiques of Value Sensitive Design [28], we set out to privilege the expression of values by community members through the workshop co-design and documentation process as a way to engage with local perspectives and interpretations of human values and to create opportunities for individual and collective empowerment.

Going further, in co-designing the workshop activities with community members, we employed concepts of empowerment from critical pedagogy [18]. We conscientiously created an environment to encourage dialogue where community members were considered “critical co-investigators,” rather than simply participants or subjects of research. Our aim was not to position ourselves as authorities over the situation, but to instead help facilitate critical thought and discussion around issues in the community and identify what, if any, types of technologies could be used in their articulation of concerns or action on civic matters. This framing was important as an overt and public recognition of the agency of the community members with whom we were working. Particularly taken in the context of a return to a more politically motivated participatory design, critical pedagogy helped inform how to co-design a community *engagement*, rather than a simply a final technical *product* [2,16].

Building as Provocation

In considering the opportunities for new ways of engaging non-technical individuals in the creation of digital artifacts, we look toward the nascent eco-system of hardware prototyping platforms. The rise of these (relatively) cheap and accessible electronics prototyping systems has provided new opportunities for people from more diverse situations to build and manipulate technological devices. The potential of these platforms, and the aspirations of those who create them, turn on the ability to shift the dynamic away from the consumption of corporate-designed devices towards a more egalitarian structure of user-as-designer [34,35,39,40].

While the intention of these new low-cost, low-barrier hardware platforms has been noble, the reality of how they enable more diverse participation is far more complex. While new kinds of tools do enable different forms of participation in society (and connect to the build-it-and-they-will-come, tool-focused aspirations of the genesis of the tech industry in the U.S. [26,42]), the democratizing power of technology is not inherent in the technology, but rather in the programs and social contexts in which those technologies are deployed [3]. Coupling these new technologies with carefully developed design-based encounters is one potential way of developing outcomes that live up to the sanguine promises of democratization that often accompanies low-cost and open technology platforms.

While new hardware prototyping tools provide material possibilities for exploring technology, we needed to develop activities and engagements that help scaffold and pro-

voke reflection about those technologies and technical capabilities from community members. To do this, we utilized a combination of methods that support provocation and reflective practice. One such approach was Critical Making, which is “a mode of materially productive engagement that is intended to bridge the gap between creative physical and conceptual exploration” [23]. The hypothesis is that “doing something yourself, as a non-expert, is a crash course in understanding how something actually works, and it is the fastest way to unpack it and learn about the things that would normally remain invisible and taken for granted” [23]. By creating opportunities for non-experts to manipulate specialized materials—the raw digital components of sensors and computation—we sought to develop a new understanding of how these components might be used in the community.

DiSalvo and his collaborators have also utilized a similar technique by taking system development out of the abstract, and bringing it to public workshops and seminars [11,12,13]. This approach allows the public to engage with practices of design and production while exploring values and beliefs around technology with each other, posing alternative techniques and results [12].

In the development of our workshops, we wanted to provoke dialogue through similar reflective and critical building activities. By removing the camera from its black box, our intent was to demystify technology and welcome comment on its potential (or lack thereof) for communal adaptation, and by changing the familiar way a camera works, we wanted to provoke reflection on sensing and surveillance. The resulting conversations and reflections that developed around the workbench as community members explored their camera kits were the focus of the workshops, not the creation of the physical objects themselves.

DEVELOPING A COMMUNITY PARTNERSHIP

The neighborhood we chose to work with was situated directly adjacent to the urban heart of a major North American city. This neighborhood was barely a mile away from the city’s downtown area, a cluster of universities, and several international corporate headquarters. Despite its proximity to a great deal of economic, social, and cultural activity, it did not enjoy the same prosperity as its neighbors. The majority of the community’s residents were African American and lived below the poverty line, amidst failing infrastructure, and received little attention from the city or state governments. According to a recent report, more than 50% of the property in the neighborhood was vacant, making it a magnet for squatting and narcotics trafficking [4].

Though there were many factors working against the people of this area, there were several community organizations that worked to provide social services and support and that operated within a legacy of social justice work done in the area. Several prominent leaders of the civil rights movement lived and organized in the neighborhood during the 1950s and 1960s. These leaders worked against horrific racial injustice and tragedy, as resistance from

white residents to integrate grew violent. There were two bombings in the community at the time, one at a home and another at an elementary school. Recalling these horrible acts of violence serves to illustrate the extent and historical legacy of racial hostility toward the African American residents of this area.

Onward from the 1950s and 1960s, there was a shift in the demographic makeup of the community, from mostly Caucasian to mostly African American (by 1970, 99.3% of residents identified as African American) [4]. Parallel with that shift, several public institutions closed, including a Carnegie Library and an anchoring elementary school. At the time of writing, additional schools closures were underway. Contemporary issues that arose during neighborhood meetings centered on chronic complaints about failing city infrastructure, illegal dumping, and unaddressed requests for the paving of dirt roads: in short, these residents were, at best, overlooked.

Due to the institutional invisibility of the community with respect to local government, a great deal of distrust and apathy had been cultivated over time. Residents were not politically engaged because their actions rarely resulted in desired changes in the neighborhood; residents were also suspicious of outsiders whose motivations were always questioned in light of decades of broken promises and failed projects. These factors made it difficult to develop the trusting and robust relationships necessary for co-developing community-based design programs.

An additional challenge to building trust in the neighborhood was that it had a long history with our own academic institution. The experience that most of the residents had with our institution was that of being the research subject, studied from an arms-length, problems catalogued, but no material effort to address those problems or empower the community to do so. Unsurprisingly, when we began our engagement, residents were skeptical of our motives, interpreting the project as another instance of objectification.

To overcome these barriers, we began to work with a community cultural organization that was focused on using culture and the arts to empower community members. In a series of meetings to establish our partnership, we explored each other’s theoretical groundings, individual goals and commitments, and the desired outcomes of our collaboration. Only after a period of 7 months of getting to know each other, when all parties felt comfortable with the idea of working with each other, did we begin planning the participatory design workshops. These workshops were co-designed with the organization leaders and most of this phase of the project was spent defining what they wanted to accomplish and how to make the experience as beneficial as possible to members of the neighborhood.

Empowerment as a Primary Goal

The most important component of the initial planning phase was that every interaction we had with residents in the neighborhood had to result in some direct benefit to the residents working with us. Initially, there seemed to be a disconnect with this particular aspect of the work and our

expectations of how the project might develop and be meaningful to the community. Something that was essential for the organization leaders—immediate community benefit through participation—seemed outside the scope for us as researchers where the potential benefits of research percolate over time and may only come later, after careful analysis and reflection. It was a new and unique challenge to consider a design process that would manifest individual and community benefit directly; more commonly, design work in HCI looks to the final artifact to convey any benefit, not the design process itself. To overcome this challenge, we turned to critical pedagogy as a frame within which to conceptualize how the practice of the workshop activities, and critically reflecting on the technologies used in those activities, connected directly to ways in which community members were contending with their social conditions [18].

By reconfiguring our design intervention to focus on empowerment through design (rather than through a designed system), we had to reorient ourselves and revisit our goals for the workshop. Initially, the workshops had begun as a way to explore different practices of civic engagement in this community. By reframing workshop activities to be clearly and immediately advantageous to the community members at each step, we had to back away from our initial goal of exploring community engagement directly and instead attend to the ways in which community members would gain a meaningful experience through the workshops and documentarian activities. Through a series of meetings with the organization leaders, we defined three areas in which the community members would benefit: developing new skills, applying those skills to a new context, and gaining an audience.

The skills gained through the workshops grew out of the manipulation of electronics and sensor technologies in a small group setting. With our guidance, community members assembled digital cameras from kits and learned to troubleshoot the assembled devices for common errors. Through this initial interaction with hardware, community members also started to imagine new and different devices they could create with the kit components.

Community members also gained experience in documenting their neighborhood. They exercised skills in photography and storytelling throughout the workshops, learning to consider how the camera shaped or mimicked their perspective, and developing narratives about the images they took so that their experiences could be shared more broadly in the community. They also used the process of building cameras as an opportunity to articulate concerns about the implications that these devices could have in their community.

To develop a broader audience, the photos and stories that were expressed by community members were plotted on an interactive map of the area. This map served as a curated space for residents' voices in expressing the identity of the neighborhood through their photos and associated stories. The resulting map was put on display at two large community events where the individuals involved were present to

discuss their experience in the workshops and to share the images and stories with the broader community. The motivation of participating in these events was to publicly acknowledge the community members as owners of the project, to showcase their work to their peers, and to use a public forum for voicing their opinions and concerns as a form of empowerment.

In addition to the instrumental benefits outlined in the plan, all of the individuals who were involved in the workshop were referred to as a "Community Historian." Growing out of the concern that they were once again the objects of study, our collaborators pointed out that "participant" conveyed a passive subject role and was a reductive way of referring to the community members who were part of the project. By using the name Community Historian, we could emphasize the agency and perspective of the people with whom we were working and make it clear that the work they were doing through the workshops was meant to be productive for themselves and their community.

WORKSHOP STRUCTURE

Over the course of the two workshops, six community residents became Community Historians. All of them identified as African American, ranged in age from 26–50 years old, and two of the Community Historians were female. All of the individuals who were a part of the workshop were actively involved in shaping what the workshops became. The activities were based on critical pedagogy, participant-led, and directly addressed issues of power and oppression [18]. As researchers, we occupied the role of facilitator.

Workshop One

The first workshop was developed around documenting the experiences and expressions of the space in which the Community Historians lived. The residents took a kit, which included a camera (iPhone), for a week of documentation. During this time, the Community Historians were encouraged to record the neighborhood from their individual perspectives. In the kits, there were cards to prompt the photographing of sentiments, places, or objects as a way to provoke their recording of everyday experiences. These cards had statements like, "this is a place where history happened," "this is a place that should change," "this is a place for feeling comfort," and "this is a place that is forgotten." There were also blank cards that could be filled out by the Community Historians. These cards were meant to spur documentation of important places in their lives and could be disregarded if the Community Historians did not feel they needed them.

The images and stories that resulted from this activity were then discussed at length in small groups of two or three Community Historians and one or two researchers at follow-up meetings that were recorded and later transcribed by the researchers. During the follow-up meetings, the residents selected the images they wished to upload to an online map of their community. Questions posed during this meeting included: Who is allowed to sense things about their environment? What would people sense if they

had the technical capacity to do so? And how would people use that information (for preservation, activism, praise)?

Unlike other means of preservation, the residents—as Community Historians—were in control of what was captured or recorded. They decided how to compose the images, how to tell the stories, and ultimately whether or not the resulting accounts would be shared publicly on the interactive map. This method is consistent with forms of photo elicitation where the goal is to shift power and authority to the person sharing the content, rather than siting that authority with researchers [21].

Over 500 photos were taken during the workshop period and about a quarter of those were selected by the Community Historians to be uploaded to the map. The selection criteria for the photos were based on which images they felt were representative of the thing, idea, or experience they were trying to convey.

Workshop Two

Workshop two was a continuation of the citizen sensing thread from workshop one. Five of the six Community Historians, two of whom were female, participated in the second workshop. Instead of focusing on the act of information gathering, workshop two was centered on tooling for this practice. The main activity was building a digital camera from component parts. Instead of inheriting black-boxed devices, Community Historians examined this technology through simplified component parts.

The cameras were assembled from a kit, which included an Arduino microcontroller, a data-logging shield, and a camera sensor. The core of the kit was a simple computer that reads and writes information to an SD card. The camera sensor could be removed, another sensor put in its place, and the Arduino reprogrammed to receive and record different types of information.

The purpose of interacting with camera technology in this form factor was to introduce electronics and sensor technology to the Community Historians. This activity was designed to bring out and extend critical reflection on the relationship between technology and society. Through the act of building their cameras, the Community Historians constructed a more flexible device for documentation, but also provided a concrete activity through which they could begin imagining how the community might build and use novel forms of technology. The workshop was specifically structured to explore how digital artifacts—in this case, sensing technologies—might be deployed to further community goals, to communicate values, and to extend the collective capabilities of the community by developing a conceptual understanding of technology as a malleable resource.

Some of the questions that were brought up during this activity were: who is entitled to open technology? Do we tinker with the technology we own? Why or why not? What values emerge through the building and use of these cameras (like privacy or freedom of information)?

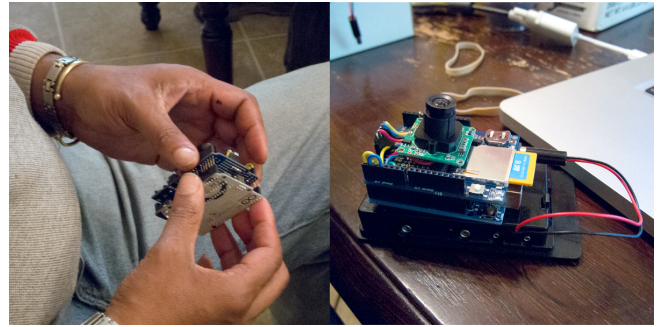


Figure 1. Community Historian assembling camera

Findings

Transcripts of workshop dialogue were subject to inductive qualitative analysis where the authors drew out thematic patterns from the Community Historians' discussions [10]: camera as eye, underappreciated beauty, lowercase history, surveillance, and documenting the mundane. The themes were directly informed by the Community Historians' lived experience and, though their experiences were situated, considering their usages and observations is a way to reconsider assumptions of user, uses, and context of use during technology design directed at supporting community engagement.

Camera as eye

During workshop one, several of the Community Historians showed concern for the conspicuousness of the iPhone in the setting of the community. There was some worry about the phones attracting unwanted attention or whether or not they needed consent from people they were capturing in their photos. Other Community Historians were interested in how the object could be absorbed more wholly into their experience: *"The eyes are like a camera, but we're not always seeing. So it's like I can take my little eyes and put them somewhere and they act just like that camera and watch."*

Another Community Historian similarly stated: *"I was just trying to give the camera my eye and just let it take what I saw. So I walked and took pictures."* This Community Historian was trying to capture the most true to life depiction of her environment, which, in this instance, included photographing an exchange with people she hesitantly described as *"a couple of drug dealers and a streetwalker."* She felt a sense of duty to include them in her representation of the community, saying: *"They are in my neighborhood. Those are my neighbors."* Her commitment to accuracy in taking account of her surroundings also allowed her to look beyond what others might deem as unsightly: *"The [drug dealer] there teasing the dog somehow humanizes him. It doesn't make it just the overgrowth that you see. People actually live and function and are in this environment."*

Accounts like these emphasize the importance of capturing "illegitimate" resources in a community setting [29]. The drug dealers are just as much a part of the neighborhood as the Community Historian. They provide different sets of



Figure 2. Series of photos taken while camera was hidden

assets and forms of understanding that can be valuable to the community at large. The Community Historian recognized that in her documentation, and because we co-created a non-judgmental workshop environment, she felt comfortable including it in her account of the space.

Underappreciated beauty

As Community Historians talked through the photos, many of them were concerned with capturing a sort of under-observed beauty about the neighborhood: *“I see the beauty in this neighborhood. But it’s covered by all so many things that don’t look beautiful, not from an outsider’s perspective. That’s why it’s so important that you see the flowers blooming.”* It is as if the image of the neighborhood is fragmented. For those who are not inside the community, the untrimmed lawns or boarded up homes look like eyesores, but for the Community Historians those things represent growth and rebirth: *“Regardless of what, everything and the way it looks, there’s still a tangent, something that’s very visible and evident, to me, that is a resilient hopefulness or something.”*

Two of the Community Historians took photos of the same neighbor’s home, which they revered for being well kept. *“I just thought it was a nice looking house. It shows a positive light.”* When discussing the images further, it became clear that the thing they were most impressed by was their neighbor’s “deep roots,” which they felt were most succinctly expressed through his manicured lawn. They saw his longstanding commitment to the neighborhood, despite decades of systemic neglect, as a service to the community and found that there were few better ways to explain that than to just point to his house next to others in the area. *“That is Charlie’s house. He’s a local resident historian... he’s been in the neighborhood over 75 years and I took the picture of the house because it shows stability. There [are] a lot of vacant buildings in this community, but that one for a number of years has maintained its character. From the little white picket fence all the way up to the way it looks the flowers in front. Then he had the sign, ‘Proud Member <community name> Neighborhood Association.’ So it showed his involvement.”*

The things that the Community Historians found most beautiful and took the most pride in were those that represented resilience, commitment, and attentiveness. Speaking of a woman on the street she saw reading everyday, one Community Historian said: *“She’s still reading, still*



Figure 3. Photos representing the beauty of the neighborhood

reading. You know, and everything to me about being here and what I like and love about this community is that... it just represents, to me, the hopefulness that resides deep within.” These qualities of consistency and commitment are ones that have direct implications for community-based design because they are the qualities that we should strive for in doing this work well.

Lowercase history

Several of the residents discussed memories through infrastructure. *“I just found myself thinking more about the streets. Because to me, the streets connect everything. That’s the history. That’s where we are. It’s all in the streets.”* Even topics as difficult as segregation were talked about through fabric of the city: *“[<street name> was the] dividing line...was black, on this side. So, if you went across <street name>, you’d better be going to the Boys and Girls Club [the first de-segregated organization in the community]. Or loaded with a pocketful of rocks.”* Though many of the streets have been renamed over time to reflect the civil rights era, people still remember the historic connections they possess because the durability of the physical street preserves the old boundaries.

The neglect that the neighborhood has endured was also evident through the city’s physical foundations in the area. One resident took a photo of a manhole cover that featured the word “city” misspelled. To this image he added one of the prompt cards that read, *“This is a place for learning lessons.”* Commenting on the photo in the follow-up discussion, another resident reflected on assumptions about the city’s decision to release the manhole cover despite the misspelling, *“But then again [the city] said, ‘It’s going to <community name>. So it’s okay.’”*

Surveillance

During the second workshops, there was some concern about the nature of the DIY cameras that we used. The cameras were very simple compared to what we had been using in the first workshop. They had a single, basic function: when turned on, they would take pictures when there was motion in front of the lens. Many of the Community Historians felt that the cameras resembled security cameras to which there were diverse reactions.

Some of the Community Historians embraced the camera’s automatic capturing capabilities and chose to treat the object as a personal surveillance system. One Community



Figure 4. Community Historian explaining his camera cover

Historian spoke about trying to set the camera up in the window of his aunt's apartment so that he could get a better view of the neighbors who he felt were up to no good. He described his cousin's reaction to his idea: *"I don't think that's safe, Mamma. People see that camera in the window... people already don't like you over here."* He continued by describing his aunt's interest in his monitoring project: *"Mamma, she was all down for it. She even went and got it a disguise. She said, 'Well, I can't just put the white box in the window. Let me see if I can dress it up.' So she covered it up [with a knit cap] and I cut a hole in it. Then she went and set it in the window and put a flowerpot on top of it...on top of the box. So we just got it all disguised up."*

The concern around surveillance connected to tensions between community and the authorities. Because of the high rates of crime in the area, the police had a very visible campaign for "See something, say something." The notion of dividing the community against itself was problematic for many residents, and for several of the Community Historians there was a desire to cultivate solidarity even in the face of undesirable behaviors in the neighborhood.

In order to mollify the overt connections to surveillance and spying on neighbors, one Community Historian requested a redesign of the camera so that it could include a button to activate the image capture, thus acting like a traditional camera. *"Is it possible to put something on this camera to make us be able to snap the picture?"* The suggestion grew out of a desire for more agency in the functionality of the cameras. *"Now it won't take pictures until you actually tell it to."*

When putting the cameras together, we initially envisioned them as digital plate, or pinhole cameras. One could use the lens cap as a button of sorts. For the concerned Community Historian though, the resemblance to automated surveillance was too strong.

Documenting the mundane

One of the Community Historians was a long-time volunteer for a community outreach center. He described the center as, *"a ray of hope in [my] life. It shines brightly in the sea of darkness."* He chose to use his camera to create a time-lapse of the activity in the center during a communal dinner. The images he captured tell a short story about the everyday experience of those associated with center. It

might be easy to take such moments for granted, but the activity of documenting provided him with the opportunity to reflect on the importance of the center in his life.

Another Community Historian talked about plans to follow homeless residents for a day. She believed that there was not enough awareness of the conditions they endured and thought the camera could be used to help inform the broader public about the issue. In her view, there was potential for change in capturing these conditions in an as true-to-life manner as possible: *"In our environment, if we get a raw look at it then we have to share that raw look with our audience...for the audience we present it to to take action once they see the raw look."* She continued by saying, *"My goal in doing this is so I'll have another tool in my arsenal by which to effectuate change."*

From the accounts of the Community Historians, there seemed to be an interest in uncovering and expressing mundanity as beautiful, noteworthy, or worthy of more regard. There were two ways that we addressed this interest. First, by putting the workshop images on the same map as historic points we made a decision to lift elements of the everyday to the level of remarkable. We also facilitated the presentation of the Community Historians work at two public festivals in the neighborhood.

DISCUSSION

Through the development and participation in community-focused activities, the Community Historians cultivated a sense of shared identity through a connection to the past (the institutions, businesses, etc.), a recognition of current conditions (street walkers, fleeing violence, abandoned buildings), and an aspirational narrative that eschewed the negative connections often placed on the community from those on the outside (rebuilding, hidden beauty).

These points of connection map to four elements of community described by McMillan and Chavis [33]: membership, influence, fulfillment of needs, and shared emotional connection. The structure of the workshop and overall goal of focusing on empowerment within the community created natural connections for reinforcing these elements. *Membership*—comprised of established boundaries, emotional safety, a sense of belonging, and personal investment—was enacted through the enrollment of residents as Community Historians, where their experiences were honored through the workshops and public presentations of the created content, and where their personal investment of time and effort was an end in itself. *Influence* came through the presentation of the collected content in public events where the Community Historians could re-tell the story of the community from their various perspectives. *Fulfillment of needs* was the basis for the focus on empowerment as residents' needs were determined by the activation of their voice in representing different perspectives on the community. Finally, *shared emotional connection*, was developed by connecting the every-day experiences with the historic legacy of the neighborhood as a home to civil rights leaders and a site of continued struggle for equality and inclusion.

What made the workshops work, so to speak, was stepping back from our initial goals of focusing on modes of civic engagement and instead co-developing the goals to reflect the needs of the community. In this regard, the participatory design did not begin a product- or technology-focused encounter, but instead sought to establish the goals of what such an encounter might try to achieve, and importantly, how we would achieve it. Such an orientation is a return to the origins of participatory design, where the focus was not on the product as such, but on the development of processes for privileging particular practices and empowering people in the face of authority and power differentials [15].

Within a community setting, this return to process, to working with design as a way to develop capacity—both social and technical—connects more strongly with action research and with a movement to reinvigorate participatory design as a vehicle for political engagement and action [2,3,16,22]. For the Community Historians, the process was focused on articulating different elements of the community, defining membership, and developing instrumental and affective connection to the community, and to each other, through the documenting and sharing of their experiences.

Seeds of Action through Identity

When we first set out to work with the community, we had high-level ideas about developing design interventions to explore civic engagement. There were a range of apparent issues that might have benefited from new modes of connecting the community to each other and to government or institutional actors who could address those issues: drug use and dealing, property code violations, illegal dumping, and failing public infrastructure were all issues where there was potential for technology mediated solutions [17,26,31]. However, such issues, while recognized by community members, were priorities of those external to the community and part of a pattern of paternalism and externally imposed corrective programs the community had long endured.

Furthermore, notions of civic engagement, as a broad category of action and interaction with authorities and institutions, was too abstract, too distant from the everyday experience of individuals who had, to some degree, become accustomed to living outside the system. By backing away from this abstraction, and focusing, with the help and guidance of our community partners, on issues that were relevant from the inside, we were able to begin scaffolding how community membership, collective voice, and technical capacity might be developed to address larger issues. By starting small and focusing on the individual experience, we could scaffold and arrive at examining larger, collective experiences.

Moreover, by establishing a discourse via the workshops on community identity, we were able to create a concrete way for Community Historians to think about civic engagement and action. The shared identity and the shared experiences of documenting the community led to realizations that those same techniques could be used to address

acute issues like code violations or illegal dumping. At the same time, the consequences of such documentary activities were considered: issues of surveillance and the corrosive effects of “see something, say-something” campaigns that pit neighbor against neighbor arose through reflection on the technology artifacts we used and built in the workshops.

One way to understand the enabling connection between identity and action is through the formation of publics [14,27,30]. As used here, publics come about through the articulation of issues, the formation of attachments, and the development of socio-technical infrastructure (or capacity) to contend with those formative issues [27]. For the Community Historians, the workshops became a way to explore community issues—framed as both negative and positive experiences—and to explore the attachments they had to each other and to the community: historical, cultural, aspirational. As the workshops concluded, the new personal experiences with the different technology artifacts planted the initial seeds of social-technical infrastructure where the Community Historians saw the potential for using the technology and their experiences of documenting the community as a way to effect change: in essence, coming to their own conceptions of civic engagement, framed by their priorities for the community and informed by their experiences in the workshops.

Designing for Community Practice and Empowerment

Two of the founding commitments of participatory design were the privileging of the practice of work and creating emancipatory systems [15]. Both of these commitments are relevant in the context of community computing as well, though they take on different characteristics. For participatory design in community settings, there is a need to focus on the practice of community membership and the elements of community defined by McMillan and Chavis provide a pragmatic way of understanding different aspects of what it means to be a community [33]. The point to consider is that design interventions in community contexts need to respect and engage the community on its own terms. Just as participatory design in a work context was setup as a counter to movements for rationalization in engineering and systems [8,15,41], participatory design in community settings likewise can act as a balance against trends of rationalization and a rhetoric of disruption that underpin reductive moves to treat all communities the same.

By developing design interventions based in community practice, we can create a setting where the designed outcomes are derived from the characteristics of the practices that are meaningful to the community. Where the sanguine rhetoric of democratizing technology and open data envision transformation through the availability of new tools and the ability to synthesize new information, it does so with little regard for the human and community costs involved in that transformation [42]. However, a mode of intervention that is based in community practice shifts the power to the community so that it is not technology and data usurping local influence and ability, but instead tech-

nology and data selected in ways to support, preserve, and amplify local influence and ability.

The notion of emancipatory systems also remains relevant in community contexts, particularly in communities that have been historically disenfranchised. However, while Carroll contends that “an important contrast between [participatory design in the] workplace and community informatics is the absence of us and them” [8], we would point to the many ways in which communities are in fact operating in the context of “us” and “them” through the ways they identify membership [33], to the interactions they have with the authority dynamics of local government and institutions. What is true, is that the binary of “us” and “them” in community contexts is mutable; it is not reducible to labor and management, as there may be many versions of “them” with which to contend. Being able to contend with the fluidity of these issues and doing so with a focus on community empowerment by building socio-technical capacities and infrastructures, rather than end products [3,16,27], is what makes participatory design relevant beyond the workplace.

CONCLUSION

At the start of the Community Historians project, we set out to understand the needs of the community and develop strategies for producing technologies with residents that would empower and amplify local forms of community and civic engagement.

As we began to engage with community members, we found that our initial formulation of “civic engagement” was too abstract and did not speak directly to the community members in a way that reflected their view of themselves or our potential partnership. Stepping back from the goal of supporting civic engagement as we interpreted it to mean, we worked with an organization in the community to co-design a set of workshops that more aptly met local needs and fit into a regime of empowerment and cultural significance. The project goals were focused on developing outcomes that were immediately relevant to community members who participated: if they spent a week doing the workshop activities, they would gain something from that experience. In addition to the workshops, we planned public exhibitions of the resulting artifacts as part of the empowerment relevant outcomes of the project.

After running the workshops, the Community Historians engaged in discussions around civic issues and community values. These included conversation about re-purposing workshop activities to address community concerns (code violations, infrastructure failures, surveillance etc.) and advocacy on behalf of other community members.

By co-developing the design workshops and focusing on community members’ values and interests, we were able to initiate a partnership that placed the community’s goals first (ahead of our own research goals). This helped the Community Historians articulate a shared notion of community identity to each other and to a broader audience.

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