Shifting from Surveillance-as-Safety to Safety-through-Noticing: A Photovoice Study with Eastside Detroit Residents

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ABSTRACT

Safety has been used to justify the expansion of today's large-scale surveillance infrastructures in American cities. Our work offers empirical and theoretical groundings on why and how the safety-surveillance conflation that reproduces harm toward communities of color must be denaturalized. In a photovoice study conducted in collaboration with a Detroit community organization and a university team, we invited 11 Black mid-aged and senior Detroiters to use photography to capture their lived experiences of navigating personal and community safety. Their photographic narratives unveil acts of "everyday noticing" in negotiating and maintaining their intricate and interdependent relations with human, non-human animals, plants, spaces, and material things, through which a multiplicity of meaning and senses of safety are produced and achieved. Everyday noticing, as simultaneously a survival skill and a more-than-human care act, is situated in residents' lived materialities, while also serving as a site for critiquing the reductive and exclusionary vision embedded in large-scale surveillance infrastructures. By proposing an epistemological shift from *surveillance-as-safety* to *safety-through-noticing*, we invite future HCI work to attend to the fluid and relational forms of safety that emerge from local entanglement and sensibilities.

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CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in collaborative and social computing**; **Field studies**; • **Social and professional topics** → **Surveillance**.

KEYWORDS

surveillance infrastructure, photovoice, community-based participatory research, entanglement, more-than-human intersectionality

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1 INTRODUCTION

Over the past few decades, advances in data-driven technologies have transformed the capabilities and landscape of surveillance [2]. From intimate home spaces to large-scale national security, the promise of "promoting safety" has become ubiquitous in legitimizing and expanding such surveillance technologies [70]. For example, pervasive technologies such as the Amazon Ring frame crime and safety as the most pressing issues in residential neighborhoods, and Amazon has promoted Ring as "your community coming together to keep you safe and informed" [15, p.830]. Yet under the regime of *surveillance-as-safety*, these technologies address people and communities whose viewpoints have been obscured or excluded in the conversation about safety, and this holds especially true for historically marginalized communities. Critical questions about what

constitutes safety, whose safety should be considered, and when safety is achieved remain unaddressed within this rhetorical device of justifying surveillance technologies in different settings [10]. This risks further reproducing and naturalizing the interlocked sociotechnical harms and assumptions that are wrought by these technologies based on race, gender, class, and other attributes [5, 85]. Attending to the conflation between surveillance and safety is thus critical in seeking an empirical and theoretical ground to prevent the proliferation of such harms.

In Detroit, the largest Black-majority city in the U.S., a similar rhetoric of *surveillance-as-safety* has been adopted by the city government and Detroit Police Department (DPD) to justify ever-expanding sociotechnical surveillance infrastructures in the city [75, 82]. As Detroit social justice organizer and advocate Tawana Petty puts it, "Unfortunately, a city that has been taught to fear itself can easily become a city that conflates safety with militarized policing and surveillance" [80]. For instance, in 2016, the city and DPD implemented Project Green Light (PGL), a city-wide surveillance infrastructure, that connects surveillance cameras installed on private businesses and properties with the city's real-time crime center. Local businesses must pay for cameras to join the infrastructure in order to receive prioritized police response [82]. DPD further incorporated facial recognition software into PGL in 2019. And under PGL, at least two innocent Black men have been misidentified, wrongfully accused, and arrested as offenders [54]. This expansion of surveillance infrastructures in the name of improving safety is ongoing. As we are writing this paper, the city council approved spending $7 million on expanding ShotSpotter, an audio surveillance system that detects the sound of gunshots, in Detroit neighborhoods [83]. Such large-scale police-surveillant infrastructures have been shown to result in aggressive police presence and heightened monitoring in poor Black neighborhoods [38]. Therefore, engaging with Detroit residents to understand their perceptions of safety while also examining the conflation of safety with surveillance are both urgent endeavors to hold public surveillance infrastructures accountable [15]. In this light, our work was guided by the following two questions: **RQ1:** *What does safety mean to residents in the Eastside neighborhoods of Detroit, and how do residents navigate safety in everyday life?* **RQ2:** *How do residents' practices and stories help us rethink the surveillance-safety conflation?*

To answer these questions, we—a team of university researchers and staff members of a community-based organization in Eastside Detroit—conducted a photovoice study with eleven middle-aged and senior Black Detroit residents. Photovoice is a community-based participatory research (CBPR) approach that allows community members to communicate their everyday practices and lived experiences through photo taking and sharing [101]. Our photovoice study consisted of an onboarding workshop, an educational workshop, three weeks of photo-taking and ethnographic fieldwork, individual interviews, and a group photo-sharing and reflection workshop that culminated in a public-facing photo exhibition. During the study, participants used their smartphones and disposable cameras to take photos that depicted their perceptions and experiences of safety and surveillance in their community.

Through a more-than-human intersectional lens [3, 20, 28, 103], our work attends to the lived experiences and practices of these middle-aged and senior Black women and men. We rely on residents' photographic narratives to "offer stories built through layered and disparate practices of knowing and being" [100, p.159]. For them, the meaning of safety is multidimensional and fluid, dependent on their entangled relations with other humans and non-humans. Bridging Anna Tsing's arts of noticing with Detroit residents' everyday life and realities, we introduce and contribute the notion of *everyday noticing* to describe how acts of noticing are weaved into residents' navigation of safety assemblages. Through participants' photographic stories, we show how residents navigate and achieve safety through multi-sensorial experiences of seeing and listening to multiple temporal and spatial rhythms and ever-shifting entangled relations. Everyday noticing is imbricated in lived materialities of urban neighborhoods in Detroit, and in this way, it is both a skill for survival and an act of more-than-human care.

Relying on everyday noticing as a site of critique, we make an epistemological shift from *surveillance-as-safety* to *safety-through-noticing*. This proposed shift allows us to rethink the conflation of large-scale surveillance infrastructures and safety. By unseeing the reductive modernist lens embedded in large-scale racializing surveillance, this shift calls for engaging with otherwise racialized and othered peoples' and communities' entangled relations with other human/non-human actors and the material. Turning to *safety-through-noticing*, meanwhile, invites us to return to the local while attending to ways to live in mutuality with each other in order to understand how safety is navigated and achieved on the ground. More broadly, this work is an effort to redistribute the visible and the sensible in an attempt to trouble the dominant arrangements of seeing and knowing embedded in large-scale racializing surveillance [16, 17, 84]. We believe that turning to *safety-through-noticing* opens up new opportunities for Human-Computer Interaction (HCI) research and design to better support the fluid and relational safety that emerges from different senses, sensibilities, and affects.

2 RELATED WORK

To situate this work, we draw from Simone Browne's critique of digital epidermalization and racializing surveillance to illustrate the reductive and exclusionary vision of othering embedded in modern surveillance infrastructure. We then turn to the new materialist more-than-human thinking and intersectional approach to ground our inquiry. Finally, we zoom into Anna Tsing's notion of noticing, which helps make sense of our findings around how communities negotiate interconnected and intersectional forms of safety.

2.1 Surveillance as Safety: The Reductive Vision of Large-scale Surveillance Infrastructures

Following a critical infrastructural lens, this work defines infrastructure as "complex material formations that operate at multiple scales," [79, p.7]. We particularly look into the large-scale sociotechnical surveillance infrastructures operated by the institutions of power, which are embedded in socio-material relations and result in uneven conditions [60].

Emerging from the transatlantic slave trade, capitalist labor control in factories, and nation-state's population management, modern surveillance infrastructure has been conceptualized as a classification project that allows institutions and the powerful to see the

surveilled subjects as pre-existing and self-contained units for observation and analysis [17, 40, 89, 104]. Such surveillance infrastructures are organized to perpetuate the alienation and rationalization of individuals for efficient economic control and sociopolitical governance [13, 89]. The development of digital technologies has contributed to the ubiquity and large scale of the contemporary surveillance infrastructure, which constitutes what surveillance studies scholar Gary Marx describes as a "maximum-security society" [71]. To be sure, a "maximum-security society" does not suggest a totalitarian omnipotent surveillance society that leaves no room for negotiation and resistance [66]. Instead, the notion of "maximum-security society" illustrates the agenda of predicting and containing future threats to the dominant order [70, 71] and extracting surplus values [41, 105] based on the assigned membership of conceptual groups. This categorical membership is assessed through dissecting, abstracting, reassembling, and thereby classifying arbitrary physical and behavioral traces at different time-spaces [12, 23, 46, 67]. Relying on classification systems, large-scale surveillance infrastructures catalog individual bodies and social relations as relatively stable sites of inquiry. In contrast, the ontological complexities and the changes of such entangled relations are reduced or rendered invisible [12]. In short, large-scale surveillance infrastructure relies on modern forms of visualization and containment that are essentially reductive and exclusionary [73, 89].

By considering surveillance as both an intersectional discursive and material practice, Black feminist scholarship brings the racialized logic of surveillance infrastructure to the fore. It directs our attention to the interlocking discursive formations and material consequences brought about by the ongoing subjugation, monitoring, and sorting of Black and brown people and communities through institutionalized practices of slavery, policing, incarceration, dispossession, and more [5, 17, 31]. In this vein, our inquiry and critique of large-scale surveillance infrastructure are grounded in sociology and surveillance study scholar Simone Browne's notion of digital epidermalization, and racializing surveillance [16, 17]. Following Frantz Fanon, the notion of digital epidermalization speaks to the process through which the disembodied gazes of surveillance apparatuses objectify and alienate subjects, thereby inscribing "truth" about their bodies [16]. For Browne, the institutionalized digital epidermalization amasses to racializing surveillance, "when enactments of surveillance reify boundaries along racial lines, thereby reifying race, and where the outcome of this is often discriminatory and violent treatment" [17, p.8]. This is to say, large-scale surveillance infrastructure enacts the hypervisible reification of race and boundaries of racialized bodies while leaving the multiplicity of Blackness and lived experiences unattended [5, 29].

In our work in Detroit neighborhoods, safety surfaced as an entry point to intervene and expand Browne's theorization of racializing surveillance. The discursive and material approach of *surveillance-as-safety* is grounded in a reductive and racialized logic in relation to criminalization and criminality. Under racializing surveillance, safety is often narrowly defined by the anxiety and paranoia of criminality, and the threatened other [73, 74]. By tracing a historical account of policing in the U.S., Lyndsey Beutin aptly unpacks how the myth of promoting safety and preventing crime is predicated on the process of naturalizing the criminality of Blackness while appearing to be objective and reasonable [8]. Obscuring institutionalized Black disenfranchisement as a problem of safety allows for justifying the existence of policing violence in poor urban neighborhoods [74] and for the growing adoption of policing surveillance technologies that have shown to operate on the existing interlocked systems of sociotechnical biases and othering [14, 18, 38, 58, 88].

Thinking with Donna Haraway, the process of objectifying and racializing the most vulnerable through large-scale surveillance infrastructure relies on "the conquering gaze from nowhere" [47]. Gaze from "nowhere" is a "god trick of seeing everything from nowhere" [47, p.581]. Critical race and feminist Science and Technology Studies (STS) and HCI scholars have argued that such a way of seeing is almost always exercised through dominant white supremacist and patriarchal arrangements [16, 29, 47, 48, 48, 76]. Disrupting the gaze from "nowhere" thus requires *re*distributing the visible and sensible [84]. Our participatory photovoice project, in this sense, is an intervention that features alternative visibility and sensibility from local viewpoints. By foregrounding the multiplicity of the meanings of safety and the practices of navigating safety among Black residents from Detroit neighborhoods through photographic storytelling, this work aims to center the lived experiences of Black people, practices, and relationships. In this light, we turn to the more-than-human entanglement and intersectionality to ground our analysis and disrupt the dominant arrangements of knowing and seeing embedded in large-scale surveillance infrastructure, which we discuss next.

2.2 More-than-Human Entanglement and Intersectionality

Our approach and analysis draw together two interrelated theoretical framings—new materialist more-than-human thinking and intersectional approaches. In this section, we bridge these two theoretical framings together, which allows us to unpack the entangled connections between human and non-human actors in enacting multidimensional meanings of safety in the face of institutionalized dispossession of Black communities and urban neighborhoods.

The new materialist 'more-than-human' thinking is predicated on the proposition that humans are ontologically inseparable from non-humans [55]. Attending to the entangled relations between the social and the natural orients toward decentering humans and foregrounding the critical role of the material world [55]. Feminist and physicist scholar Karen Barad suggests that people and material things are mutually constituted and that the boundaries of human and non-human actors are not linear or stable but enacted and under continuous negotiation [3]. Entanglement thus articulates relational ways of being—humans and things come into being only through inextricable relations within the shifting socio-material (and, correspondingly, sociotechnical) configurations. In thinking with Feminist STS scholars, this relational way of being and endless entanglement requires us to "stay with the trouble" [50] and "uncertainties" [87] while allowing us to see beyond how linear boundaries subjugate our ways of knowing and being [3, 96].

In HCI, Frauenberger teases out a paradigmatic shift towards "Entanglement HCI" [39] in which HCI scholars have engaged with the new materialist thinking to 1) rethink the entangled relations

between human and technological apparatuses [78, 94], 2) recognize the partiality and multiplicity in knowing [4, 76], 3) attend to ethical questions of how the sociotechnical systems we create shift the ontological nature of humans and things [59], and 4) craft spaces and processes to engage human and non-humans together in participatory speculation of alternative sociotechnical arrangements [62]. Our work takes up these shifts in two ways. First, we trace the contingent and uncertain entangled relations within the shifting socio-material configurations of Detroit neighborhoods that affect the sense of "safety" with seemingly linear and stable boundaries. Second, by attuning to practices and affect, we seek to draw comparisons between local ways of sensing and knowing with the "god-trick of seeing" embedded in large-scale surveillance and in effect to make visible the alternative sociotechnical practices that are more ethical and responsible.

On the other hand, intersectionality is a critical framework that attends to the intersectional forms of othering and unequal material conditions produced by interlocked systems of categorization and regimes of oppression [28]. As Black feminist scholar Patricia Hill Collins puts it, "Oppression cannot be reduced to one fundamental type," and "oppressions work together in producing injustice" [26, p.18]. An intersectional approach is especially meaningful in understanding and elevating the complex experiences of disenfranchised people and communities, as described in the previous section [28, 36]. HCI scholars rely on the intersectional lens to interrogate the sociotechnical and material harms brought about by the design and use of technologies (e.g., [52, 68]) and explore social justice ways of design (e.g., [35, 51]). Yet, these discussions of intersectionality in HCI have not yet engaged with more-than-human thinking. Some recent STS scholarship has shown that more-than-human intersectionality is especially helpful in unpacking how socio-material entanglements shape the processes of classifying and sorting humans and non-humans, and how interconnected forms of inequalities are (re)produced in this process [20, 22]. In our work, we take up the more-than-human intersectional lens to contextualize the socio-material arrangements of Detroit neighborhoods configured by the aforementioned intersectional discursive formations and material consequences of surveillance infrastructure [17]; it is precisely these shifting socio-material arrangements under intersectional inequalities within which residents attune to their entangled relations for safety.

2.3 Introducing the Arts of Noticing

Aligning with the new materialist more-than-human thinking, feminist STS scholar Anna Tsing calls for us to notice or listen to the unruly edges of things, the things that have survived despite capitalism's devastation [100]. She writes, "The new alliance I propose is based on commitments to observation and fieldwork—and what I call noticing. Human-disturbed landscapes are ideal spaces for humanist and naturalist noticing. We need to know the histories humans have made in these places and the histories of non-human participants" [100, p.126]. Tsing proposed noticing as a methodological commitment to paying attention to the otherwise overlooked people, non-human species, and things—their needs, voices, and viewpoints—in the more-than-human assemblage.

Noticing a need resonates with feminist political scientist Joan Tronto's now-classic ethics of care [97], which particularly focuses on attentiveness. Indeed, focusing on the arts of noticing requires us to be attentive to entangled ways of being together with other beings and material things [99]. Noticing requires us to attune to the spontaneous encounters and happenings of things. Noticing differently allows us to step in and out of familiar frameworks of reference and identify an alternative to the tired practices of opposition, critique, and othering [61].

In HCI, sustainable and posthumanist scholars have taken up Tsing's arts of noticing [100] as an analytical sensibility to paying attention both to the complex relationality within sociotechnical assemblages [61, 64] and to the fostering of collaborative relations between humans and non-humans through design [9, 33, 63, 65]. For example, Liu et al. relied on the sensibility of noticing differently to see weeds and pests as companion species to humans and other plants [64]. In addition, HCI scholars have explored noticing as a way to design interventions that take often overlooked viewpoints into consideration. They write that noticing is an "approach related to decentering by contesting dominant narratives and questioning established ways of knowing in design research" [65, p.379].

In this paper, we extend the notion of noticing in two ways. First, we explore photovoice, a community-based participatory research approach, as a methodological intervention that allows us to notice marginalized voices through their photographic stories and lived experiences. Through working alongside Eastside Detroit residents and relying on their own photographic narratives, we attend to their lived experiences of navigating safety in urban neighborhoods with growing surveillance infrastructure. Second, we extend noticing from a methodological commitment into the everyday setting to describe residents' mundane practices of navigating safety within their entanglement with other humans and non-humans, which we called "everyday noticing."

3 METHODS

3.1 Photovoice as a Community-Based Participatory Approach

The photovoice approach we adopted in this study is a visual qualitative, CBPR, and participatory action research (PAR) approach based on the understanding that people are experts in their own lives [101]. Epistemologically, photovoice is grounded in feminist theory, constructivism, and documentary photography [53] and has shown to be a promising decolonial methodology in which community members and researchers share credit in knowledge coproduction. Photovoice advocates an asset-based perspective by offering a space for participants to document both community assets and concerns [69], reflect on the process through which the photos were produced, discuss the photo artifacts with community members, and eventually communicate with broader stakeholders and audiences like policymakers [102]. In this way, photovoice allows community members to showcase and communicate their everyday practices and situated experiences from their viewpoint instead of seeing them through researchers' eyes. As a CBPR approach, photovoice disrupts imbalanced academic-community power dynamics, challenges the potentially biased representation of lived experiences, and encourages collective reflection [45].

Aligned with scholars who have recently advocated such approaches in technology design [24, 51], visual methods have been widely adopted in understanding the social settings in which the systems are deployed and uncovering individuals' technology use in practice. HCI scholars have employed photo-elicitation interviews in the context of energy consumption and sustainability [34, 91], and more recently, they have employed photovoice to investigate technology design at the intersection of race and religion [77]. Outside of HCI, photovoice has been used to study how marginalized communities, including Black lesbians in the Western Cape [11] and high school students in Cape Town [106], navigate safety. Our work builds on these studies by using photovoice to study the relationship between safety and surveillance within HCI.

In Detroit, photovoice has been used by community organizations and scholars to identify and make visible the intersectional inequalities and structural violence experienced by local Black and brown communities in the contexts of housing [21], violence in the communities [44], health [86], civic engagement [42], and more. For example, Sampson et al.'s work [86] attends to how residents handle abandoned vacant spaces in Detroit neighborhoods and how their acts of caring for these spaces would, in turn, affect perceived safety, health conditions, and relations among neighbors. As we will see later, vacant spaces are similarly identified as one of the key non-human actors in our participants' more-than-human safety assemblage. With the entry points of safety and surveillance that differentiate our work from past photovoice studies, our study attends to the meanings, affect, and practices around safety. Instead of viewing perceived safety as a state with linear boundaries, our more-than-human intersectional approach allows us to trace the fluidity and multiplicity of what safety means and how it is negotiated within the different sensibilities and mutual affectiveness of humans and non-humans, including, and also extending beyond, vacant spaces.

3.2 Community-University Partnership and Positionality

Following the CBPR approach, the university and the community-based organization (hereinafter, CO) formed a partnership. The CO is located in Eastside Detroit and develops initiatives to meet the unique needs of Eastside neighborhoods and residents.[1] This includes facilitating programs to support many initiatives, such as community economic development, community resources, engagement, wellness, and climate equity. The CO and a member of the university research team have been engaged in community-based participatory research for nearly a decade. While safety was not an explicit initiative, the CO was motivated to understand community perceptions of safety, as it is central to many of its programs.

To facilitate our collaboration, the university and community teams met monthly during the planning phase from January to April 2022 to identify research questions, develop recruitment and study strategies, discuss ethical considerations, and prepare materials for the university's institutional review board (IRB). During the IRB application process, the first author conducted workshops with the community team members to walk through human-subject ethics and compliance training. Thereafter, the community and university teams worked closely to design study material, prepare meeting logistics, engage with participants for photovoice activities, and evaluate the partnership. After completing the photovoice activities, both teams, along with the participants, worked closely to unpack insights from the project to inform community action items.

All members of the university team and the community team are co-authors of this paper. The university team was comprised of researchers who varied in terms of race, gender, nationality, and academic status, and none of the researchers were originally from Detroit. The community team consisted of CO staff members who were either native Eastside Detroiters or had extensive experience working with the residents from the Eastside. Thus, throughout this research project, we paid close attention to the impact of various positionalities and power dynamics on the findings and implications of the work. We worked alongside community members who were co-creators and co-owners of the research process, findings, and artifacts. The community-based participatory approach facilitated engagement and helped ensure that we captured residents' experiences faithfully. The community team was involved throughout the research process, guided our thinking and methods, and co-devised ways to benefit the community through our research activities. For example, we agreed that hosting a photo exhibition would be a meaningful way for the community to come together and share and discuss their views about community safety and surveillance; section 3.4.6 includes details about this activity.

The university team also continuously member checked the findings with both the participants and the community team members. The university-community partnership is still ongoing. At the time of writing, we are exploring ways to further integrate the findings and the photovoice method into other programs at the CO, distribute the findings to multiple stakeholders, and address the tangible needs raised by community members during the study.

3.3 Participant Recruitment

The community team led the recruitment effort in May 2022. The community team advertised the study to adult community members who might be interested in the study through emails, phone calls, online posts, and advertisements in community meetings. We onboarded eleven community members for the photovoice activities, and all completed the full project. All participants were Black residents living in Eastside Detroit, and most of our participants were women (n=10). The average age of participants was 65 years old (ranging from 49 to 79). Among all eleven participants, eight were retired or unable to work, two were working full-time, and one was employed part-time. Among nine participants who shared their household income, the majority (n=7) reported an annual household income lower than $30K, one between $30K and $50K, and one between $50K and $75K. Among ten participants who shared their educational attainment, one had completed some high school, one had completed a GED, four had some college, two had Bachelor's degrees, and two had master's degrees. The majority of our participants were homeowners (n=10); one participant rented an apartment from a senior public housing community.

[1] According to the American Community Survey conducted by the U.S. Census in 2021 [19], the medium household income of the zip code where the CO is located is $28,718 (whereas the medium household income in the state of Michigan is $63,202). Over 96% of the residents in the area are Black. The area's poverty rate is 36.7%, which is significantly higher than the state-wide rate of 13.1%.

3.4 Study Procedure and Photovoice Activities

The main research activities took place in a hybrid form between May and June 2022. All group sessions (including the onboarding, education, and final workshop) were conducted online through Zoom. Other activities (including photo taking, individual check-ins and fieldwork, individual interviews, and the community-based photo exhibition) were conducted in person. The researchers and participants followed the COVID-19 health protocol and mask requirements during in-person interactions. Individual and group sessions were audio-recorded and professionally transcribed. We also took comprehensive observation and field notes during all sessions. Upon completing the full study, each participant received a total of $175 from the university and CO in compensation.

3.4.1 Onboarding Workshop. The community and university teams first conducted a 2.5-hour online group session to onboard all participants and learn about the participants' community. During this onboarding workshop, we invited participants to introduce themselves and reviewed the invitation to engagement among the group. We then provided an overview of the photovoice approach, focusing on its benefits, procedures, and objectives. We also highlighted the history of photography in social change and the ethics of photo taking. Thereafter, we invited participants to engage in a group discussion on their perceptions of neighborhood, community, and safety. Participants were encouraged to reflect on the assets of their neighborhood, their perceptions and relationships with the city of Detroit, and their overall perceptions of safety.

3.4.2 Educational Workshop. The community and university teams then conducted a 2.5-hour online educational workshop to learn the basics of photography and photovoice prompts. The two workshop leads (one from the university team and one from the community team) were both experienced in photography, and one had experience in professional photography. We started the session by showing classic photos from photographers Gordan Parks, Dewoud Bey, and Roy DeCarava.[2] We invited participants to discuss what they saw in the photos, what messages they interpreted, and how they situated the photos in particular historical and sociopolitical contexts. We particularly discussed how the composition of pictures and the use of reality and symbolism in photos can shape the feeling and interpretation of photos.

Thereafter, we provided participants with three categories of photovoice prompts: neighborhood and safety, surveillance, and surveillance technologies. In terms of neighborhood and safety, we asked participants to take photos of what safety means to them, how they navigate safety needs, and how to promote safety in the community. For surveillance, we encouraged participants to reflect on what surveillance means to them and their role in everyday surveillance. For surveillance technologies, we invited participants to capture the surveillance technologies they used or encountered that are related to safety purposes, as well as their interactions, perceptions, and experiences with these technologies.

3.4.3 Photo Taking, Check-ins, and Ethnographic Fieldwork. After the educational workshop, participants spent three weeks on photo-taking based on our photovoice prompts. During photo taking, participants were instructed to take at least two photos per category of photovoice prompt each week, for six photos per week or 18 photos across the photo-taking period. We asked participants to send their photos with a few sentences of description to the study team through SMS messages. Both the community and university teams maintained communication with each participant through SMS messages and phone calls. Through ongoing communication, we could remind participants to share photos, and we could offer technical support in photo-taking and sharing.

In the second week of individual photo taking, the first author and the third author held office hours for one day at the CO's community center, where participants could drop in and ask questions. The first author was also invited by participants to visit their homes and neighborhoods. During 3 weeks of ethnographic fieldwork, the first author held unstructured discussions with participants regarding their experiences of living in the neighborhood and their perceptions of surveillance. This fieldwork allowed us to build rapport with participants, follow up on their progress, walk through the photos they had taken, discuss further photo-taking plans, and observe participants' and community members' everyday lives.

To allow flexibility, we also offered disposable cameras in case participants experienced technical challenges. Only one participant wanted to use a disposable camera in addition to taking photos on her smartphone during the check-in. We collected this camera after a week for processing.

3.4.4 Individual Interviews. After three weeks of photo taking, the first author conducted in-depth interviews with each participant. Before the interviews, we collected and organized each participant's photos in separate slide decks. The interviews were held at the CO community center and participants' homes, as per their preferences.

In these interviews, we invited participants to go through each photo they took. We discussed the stories behind each photo and the intended message the participant aimed to capture. We also prompted participants to reflect on how each photo spoke to safety and surveillance technologies used in the community. Participants were asked to reflect on their experience of photo taking in regard to the benefits and challenges of communicating feelings through visual means. We also asked each participant to identify two to three photos they deemed most significant and meaningful to share with the larger group of participants during a group reflection workshop. We worked with participants to develop titles and descriptions for each selected photo if they hadn't already done so.

3.4.5 Photo Sharing and Reflection Workshop. After one-on-one interviews, the community and university teams conducted a three-hour online photo-sharing and reflection workshop for all participants to share and discuss each other's photos. In the first hour, we separated participants into three small groups. Within each group, we invited participants to present their selected photos and to comment on others' photos following the structure of Wang's "SHOWED" questions [101].[3] After all participants presented and discussed their photos, each group discussed the shared, interesting,

[2]These photographers are known for their photography work in challenging the under-representation of Black people and communities.

[3]Wang's (1999) "SHOWED" set of questions have been frequently used and adapted in Photovoice research. The questions are as follows: 1) What do you **S**ee here? 2) What is really **H**appening here? 3) How does this relate to **O**ur lives? 4) **W**hy does this condition **E**xist? 5) What can we **D**o about it?

and surprising themes they noticed. Based on the discussion, each participant chose one photo to bring back to the large group.

In the second hour of the workshop, each small group reported their selected photos and themes that emerged to the larger group. We then invited all participants to discuss their impressions of the selected photos, how the photos and stories confirmed and/or challenged their understanding of safety and surveillance, and collective action items to better support safety within the community.

In the final hour of the workshop, we asked participants to share their experiences participating in photovoice activities and their thoughts on how photography could be incorporated into CO's future programming. The community and university teams also appreciated participants' efforts in sharing their stories and experiences and invited them to contribute ideas to the upcoming community-based public-facing photo exhibition.

3.4.6 Community-Based Public-Facing Photo Exhibition. During the photo-sharing and reflection workshop, participants discussed their willingness to organize a community-based event that brings the community and neighbors together to share the photos and stories and continue discussing the subject matter. As such, based on the photographs collected during the photovoice project and participants' inputs, the community team and the university team collectively prepared, designed, and implemented a community-based photo exhibition titled *Every Photo Has a Story: An Eastside Story on Safety and Surveillance from Behind the Lens*.[4] The exhibition event was held at the CO community center in August 2022. This photovoice exhibition offered a space for participants to showcase their photos and stories with people and stakeholders who were not part of the project. Through storytelling with families, friends, neighbors, and other stakeholders (including media outlets, community organizers, and academics), participants shared their everyday experiences and thoughts on safety and surveillance to advocate for community safety and accountable use of surveillance technologies. In addition, we used this exhibition as an opportunity to member-check our findings and make notes of discrepancies.[5]

3.5 Data Analysis

Data analysis included transcripts of all individual and group sessions, the first author's observation and field notes, participants' photos and photo descriptions, and participants' responses to feedback surveys. We followed Adele Clarke's situational analysis [25] to analyze our data iteratively. Situational analysis, a postmodern turn of grounded theory, allowed us to attend to the social, political, and material relations among varied actors. The first author open-coded the interview and workshop transcripts on ATLAS.ti, and the first author and the second author met weekly to discuss, compare, and revise codes and themes generated in this process. Thereafter, participants' photos and field notes were similarly reviewed, coded, and analyzed by the first author to triangulate and contextualize the interview data. Four authors similarly met weekly to discuss the codes and themes identified in the observation data. Following Clarke's mapping approach in situational analysis, we created several situational, discourse, and social world maps and analytical memos [25]. All authors collectively discussed these maps and analytical memos to generate theoretical insights into the data.

[4]All participants collectively brainstormed and voted for this title.

[5]Note that due to the scope the paper, we did not report observations from this exhibition in this current article. Readers can refer to our case study [69] for details and takeaways of organizing this community-based public-facing photo exhibition.

Figure 1: *Eat Well and Stay Healthy*, by Tammara. "This sign shows where people who care live and work together to have a visibly safe and clean space to raise our families. What about us is people working together for a positive change."

In the rest of the paper, we did not anonymize participants based on their preferences. We have withheld specific details to protect them from being identified. As co-owners of the research process, findings, and artifacts, our participants wanted to challenge blanket anonymization.[6] All participants were debriefed during the group reflection workshop about the risks of de-anonymizing themselves.

4 FINDINGS

Section 4.1 describes the multiplicity of *meanings* that safety embodies in residents' everyday lives—from achieving bodily autonomy in home spaces to avoiding threats and fear in public spaces, to seeking peace of body-mind. Through photographic stories and ethnographic vignettes, we show that safety is deeply relational and situational. The meaning of residents' safety is negotiated in their shifting entangled relations with an assemblage of human and non-human actors in a particular time-space and context. In section 4.2, we unpack residents' *practices* of navigating and achieving a sense of safety through acts of "everyday noticing." Practicing everyday noticing requires residents to attune themselves to other human and non-human actors through sensibilities of seeing and listening. Section 4.3 shows everyday noticing as a community-rooted collective practice and its roots in locally situated knowledge. Comparing and contrasting these qualities of everyday noticing with those of large-scale surveillance infrastructure perceived by residents reveal the critical differences between the two.

4.1 Multiple Meanings of Relational Safety in the More-than-Human Assemblage

In this section, we unpack an assemblage of human and non-human actors that shapes meanings of safety for residents. By showing

[6]In fact, past feminist scholarship has raised concerns over blanket anonymization in terms of authority, credibility, and epistemic injustice (cf., [7]).

residents' entangled relations with these actors (especially with the often neglected non-humans) and their everyday encounters, we intend to highlight the multiplicity and situatedness of the meanings that safety can embody in residents' everyday life.

4.1.1 Relations with Human Actors. In their photographic stories, all participants repeatedly emphasized how their everyday sense of safety stemmed from a network of people with whom they were associated. When living in urban neighborhoods, one is never in isolation but always embedded in complex relations with other human actors, especially those in the community. A quote from Juannette illustrates this sense of interconnectedness: "*It's my community. I lived in the community. I don't live on an island. Well, so I have to communicate with people. I have to be a part of the community.*"

Tammara has lived on her street her whole life. She sees herself as the leader and educator of the neighborhood. She has founded neighborhood block clubs and youth clubs and now serves as president of her neighborhood association. One of Tammara's photos, *Eat Well and Stay Healthy*, depicts a signboard that her block club set up to remind people of their connections with families and community (figure 1). In describing the photo, she said,

> *People always saying when something happen or something go on, "That's his block. Ain't none of my part." But see, I don't look at things like that because that one person is attached to a lot of people. That's just like you. Okay. Anything that bother you, it bother your kids, your wife, your grandkid, your grandfather, your sister, your brother, your friend, your cousin. See it's a lot of people that's hooked to one person. So you not just hurting that one person, indirectly you're hurting a whole lot of people.*

As Tammara articulated here, one's everyday navigation and negotiation of safety is always conditioned by inseparable relationships with other humans, including family, friends, neighbors, acquaintances, and unknown others. Often, these human relationships are entangled with non-humans, as we will show next.

4.1.2 Relations with Non-Human "Companion Species". At 80 years old, Ms. Minnie is our most senior participant. It was a hot afternoon when we visited her house for our check-in. As we walked to her front door from the sidewalk, "*Woof, Woof,*" a dog quickly ran to the front door and barked from the inside. After a short wait, we heard footsteps coming closer to the front door. "*Don't worry baby, it's Alex [First author]. He's visiting us, you remember?*" It was Minnie. She opened her door and greeted us, "*Alex, I'm sorry! Diablo always barks loudly like this when strangers come to the door.*"

The dog, Diablo, is featured in one of Minnie's photos (figure 2a). To Minnie, Diablo represents day-to-day companionship and protection. Minnie explained that she has a big family with five children and 22 grandchildren but they do not live nearby, so she and her husband raised Diablo as part of their family like a child. In Minnie's words, Diablo is "*here with me every day*" and "*right there*" whenever she and her husband, who has a disability, need help. For example, Diablo would sometimes try to help Minnie's husband lift his arm when he is struggling to get out of a chair. This "*unconditional*" relationship with Diablo makes Minnie and her husband feel comfortable and protected at home, especially because of Diablo's alertness—which has helped in the past when protecting their home from intruders and bodily harm. In Minnie's words, "*[Diablo] kept people from breaking in the house when they went to break in the back door, and they saw that he was in here. And they said, 'Oh, there's a dog in there.' They were scrambling to get off the porch out there.*"

Ryn's relationship with her dog, Zeus, went beyond the binary of human-pet. Instead, Zeus became a non-human actor who facilitated relations among human actors in a safety assemblage. As a retired social worker, Ryn called Zeus her "*therapy partner*" in supporting community members with severe mental health challenges, a group positioned as a safety threat when in distress:

> *I take him around for relief. He is very gentle, and people can relax and say many things to the dog. They don't have to talk to me, they talk to him. And he just listens, unconditional love... And he provides wellness to others, but he gives me my peace of wellness [too]... So I experienced firsthand, not just for myself but for the community how therapeutic he was.*

Indeed, individuals with mental-health struggles are especially vulnerable in urban communities given the systematic barriers to appropriate health-care support and their being subjected to brutal, and sometimes fatal, police violence during emergencies. Here, Ryn described moments of encounter between these vulnerable community members and Zeus. The relationship between the most othered human and animal that emerges and is cultivated from such moments of encountering is mutual, intimate, and affective—a kind that is not afforded by but entangled with human relations. Donna Haraway develops the idea of "companion species" to describe a particular kind of relationality that "there are no pre-constituted subjects and objects, and no single sources, unitary actors, or final ends... there are only 'contingent foundations'" [49, p.6]. As shown in Minnie's and Ryn's case, humans are inextricably and mutually entangled with companion species like Diablo and Zeus in their everyday navigation of safety, and their ways of being and living are interdependent.

This relationality between humans and non-human companion species in the safety assemblage is not limited to domesticated animals. In their photos, residents tried to capture the moments in which they met wildlife such as birds, butterflies, bumblebees, rabbits, and plants such as flowers, trees, and weeds (for example, see figure 3a). When discussing these photos, residents shared with us their spontaneous coordination with these non-human actors, such as protecting a rabbit habitat when developing a new community garden and feeding birds when they are flying back to their nests in the evening. To them, these examples of indeterminate encounters embody "*real peaceful moment[s]*" (Brenda)—time and space where safety means peace and freedom from fear.

Tammara's ongoing negotiation of the social and material configurations within the safety assemblage is relevant here in showing the relationality between humans and plants as companion species besides animals. Almost every time we visited Tammara, she was working on her community garden across the street from her house (figure 3b). She would always invite us to sit down on a long bench inside this garden. Looking at the garden in front of us, she shared

Figure 2: 2a (*left*): *My Baby*, by Minnie. "His name is Diablo, that means the Devil in Spanish. And he can be a devil sometimes." 2b (*right*): *Animal Surveillance*, by Ryn. "Riding up my dog, give me a fake feeling of safety. No one walks up or ask me for nothing. He keeps everyone away! But if anyone really comes out of nowhere, he will be trying to get in my lap. I provide wellness to others through my Animal Assisted Therapy work. Zeus is a great partner and offers a sense of well-being and safety to others. He is a wonderful therapy partner."

about how she was "*using [her] hands in the dirt, nature, to try to build a garden*" from a then-abandoned vacant lot.

To Tammara, one of the key factors of her personal and communal safety was health, especially in regard to food safety in the community. She had been working with children on the block to plant different vegetables in this community garden each summer before the pandemic. However, as shown in the photo, this summer, all the vegetables were planted in big bags instead of in the ground this summer. Tammara explained that she moved a large 12ft × 50ft trailer house into the garden (see the white trailer house on the left side of the photo in figure 3b) and that she planned to convert the trailer into a shared community space for cooking and exercising. However, the pandemic postponed the original plan of turning the trailer around to face the street and adding a porch with a ramp, which resulted in the creative idea of planting vegetables in bags:

> *The kids was planting and stuff, and they [said], "Well Ms Tam, [turning the trailer around is] going to mess up our garden." But it's not going to mess it up because the roots and stuff is in the bag real good. So if it did grow through the bag, even if we cut the root at the bottom, it wouldn't kill the vegetable. So we could move them until they turned the trailer around, then we can place them to let them continue to grow.*

Looking at the photo taken a few weeks ago in which sprouts in the bags were still small, Tammara went on:

> *But right now, they real tall. They taller than this now... And I knew the kids, everybody, wanted a garden. The community, they love green tomatoes, and hot peppers, and all that and greens. So I said, "Well, we still going to have a garden. Thank God. But we just got to do it a different way."*

It is worth noting that Tammara's photo, as an artifact, captures a particular moment of encountering and material arrangement, which adds a layer of temporal shifts in her storytelling. When we checked in with Tammara again after a month, she happily told us that the trailer had finally been turned around and that none of the peppers, tomatoes, and greens were damaged but ripe and harvested from these bags. In Tammara's case, we see an intricate relationship between human and non-human companion species, where Tammara herself, children, the rest of the community, and vegetables are key actors. Yet even in this situation, there was a negotiation. Safety and health to Tammara and the community were achieved through the compromised cultivation of the vegetables. Yet this compromise also represents a way that Tammara and her community respected and cared for the very life of these vegetables.

4.1.3 Relations with Non-Human Objects and Spaces. Besides companion species of animals and plants, all participants shared photographic narratives that centered on non-human Objects, such as mace (i.e., pepper spray), fences, lights, speed humps, and home security cameras, among others. The ever-shifting configuration of these material objects and their relations with human actors is constantly (re)producing different meanings of safety to residents.

Minnie's photo *Safety Stair Lifts* illustrates how the meaning of safety was shifting within this process of reconfiguration (figure 4a). When we stepped into Minnie's house, the first thing we noticed was the electronic stair lift—the machinery immediately stood out in contrast to the wood material used throughout the home. As Minnie and her husband have aged and her husband's physical condition has changed, going to the bedroom up a long flight of wooden stairs has become particularly challenging. "*We didn't want to move*," Minnie admitted because this home contains their lifelong memories. To remain in their home, Minnie and Eddie persuaded their caregivers that "*the stair lift would be the best thing for us*." To them, safety existed in the compromise between staying in their home with its rich personal meaning and avoiding falls on the old

Figure 3: 3a (*left*): *Morning Peace*, by Brenda. "Peace in the morning with a 'bird' on the fence facing the rising sun." 3b (*right*): *My Baby*, by Tammara. "Learning how to eat well and stay healthy is the No.1 thing to a healthy and safe life, because we need to watch the things we put in our body. But when you grow your own food, you know what you put in your body. Community work together for a healthy change."

stairs. The subsequent introduction of the electronic stair lift shifted the human and material configuration in their home space:

> *And the stair lift was there for safety [...] of Eddie and I both. We had to have that in order to get up and down the steps, we couldn't go up and down the steps very good because [...] we both got bad knees. So that was a very good safety feature for us in order for us to stay in our home. That was the main thing, because if we didn't get that, we wouldn't be able to stay in our home.*

In a different context, Loretta enthusiastically shared her story about transforming a vacant lot on her block into a community garden (figure 4b). Thanks to a fellowship from CO, Loretta has spent the past two years turning an untended space with bushes and weeds into a shared community space with 104 kinds of native Michigan plants. Loretta saw the community garden as "*the first transition of the neighborhood*." "Transition" here speaks to the process of re-constituting and re-enacting local relational assemblages. And in this process, safety for community members has shifted from being wary about each other to becoming weaved into the relational ontologies within the community:

> *Before we built this garden, the community didn't even look like a community. [The garden] has brought so much, saying like, closer together with the community, getting closer, getting in tune with the community, see what the community needs and wants. And [people] walk past and just be happy to just wave and speak. And then, people is cutting their grass more. They doing a lot of stuff, more than what they were doing because it has brought unity back in the community.*

What Loretta described suggests the role of the non-human garden in shifting the socio-material arrangement and the associations among actors. As shown in the photo's caption and this quote above, not only have the ways people navigated safety in the community shifted but also a new possibility of encountering has been engendered. This community space thus constitutes and is constituted by the human, non-human animals and plants, and other non-human objects that reside there. In this sense, the community space where residents negotiate safety is in relation and always entangled.

4.2 Navigating Safety through Multisensorial Everyday Noticing

Anna Tsing uses "noticing" to describe a mode of the ethnographic process that pays attention to the otherwise overlooked and neglected [100]. Noticing is thus a commitment to observing and attending to the surrounding human and non-human worlds, the material and immaterial, rather than looking ahead. In our engagement with participants, it has been made clear that the commitment to noticing is not a nice-to-have but a *must-have* set of practices for Detroit residents to navigate safety in their day-to-day existence. We call this ongoing observation and examination of one's surroundings for navigating and negotiating safety "everyday noticing," which is well-summarized in a quote from Loretta:

> *Really, you can notice things. You notice because you taking ownership and pride in the way you live. You not just walking out your door, just going to your car, getting in and I don't care about nothing around me. No. You come out your door, and you might look that neighbors cutting grass. Or if you don't see a neighbor for a while, you get kind of concerned. Or either when you in the house and you hear your neighbor pull up, me, I immediately look out the windows to make sure that they get in their house good. Because you get that type of sense when you been in the neighborhood for so long, you kind of know when things ain't right. So you just look out for each other.*

As articulated by Loretta, everyday noticing is multisensorial (i.e., both seeing and listening), rooted in collaboratively looking out

Figure 4: 4a (*Left*) *Safety Stair Lifts*, by Minnie. "My stair lift—I'm happy to have it." 4b (*Right*): *My Butterfly Rain Garden*, by Loretta. "My Butterfly Rain Garden was the first project that I created that transformed my Community in August of 2019. When I finished my garden, I was so excited to be able to look out my window and see what I have accomplished. Still to this day it makes my heart smile to hear the birds singing in the morning, and the butterflies and bees coming back to our community. It has brought unity back to our community."

for each other, and deeply situated in local knowledge accumulated over time (i.e., knowing what's "right"). We unpack each of these features of everyday noticing in the following sections.

4.2.1 Everyday Noticing through Seeing. As described in the quote above, the visual process of seeing is a critical mode of residents' everyday noticing. Everyday noticing, in this sense, is not simply about seeing and observing what's going on in one's surroundings and what's happening in the neighborhood. It is also a process of looking out for oneself and each other. As Tammara articulated:

> *I tell people, you got to be safe, we got to look out for each other, when things don't look right. I know how things look over here, so if I see a neighbor and they look out of place, like in other words, I know I don't see Miss Such and Such out after 10 o'clock, then I think, "Oh, is she okay?" Because that's not normal how she do. Or I know that I got a neighbor that come in at 10, 11. They coming from work. So it's just awareness. You just got to be aware of things.*

What Tammara described was something we repeatedly heard from all participants. Tammara's noticing involves looking out for her neighbors, each with their own patterns of everyday life. In other words, each neighbor has their own "normal"—being or not being present in the neighborhood at 10 p.m. could indicate different meanings of safety for different neighbors. If we follow Anna Tsing's thinking, each actor in the safety assemblage has their own temporal rhythms, and spatial arcs in their everyday life [100]. Looking after each neighbor required residents like Tammara to attune themselves to different neighbor's normals when seeing them or not seeing them, which is a discreet and affective process.

Despite the shared goal of looking out for neighbors, non-humans in the assemblage are a critical part to residents' practice of everyday noticing. For example, one of Tammara's photos depicts a vacant house on her street (figure 5a). Through this photo, she was trying to showcase how she watches out for schoolchildren when they pass by the house on their way to school:

> *That one right there is the vacant house... We know that for safety reasons, it needs to be torn down. Because someone could be in there and we have kids [skipping] the school. But I see basically what they do, we have it boarded up [and] you would know if somebody had been in there because the boards would be missing.*

In this case, Tammara's noticing relied on the boards on the broken window and door of the vacant house. Paying attention to these boards and whether they are "abnormally" missing became the proxy for Tammara's watch out for these kids. Through this proxy, she could be aware of whether anyone was squatting in the abandoned house and whether it was safe for the school children.

4.2.2 Everyday Noticing through Listening. This dependency on non-human actors to stay aware of one's surroundings is not limited to the visual process of seeing. In fact, many of the participants' photos and stories provide a vivid account of how sound and the process of listening play a critical role in their everyday noticing. For instance, Juannette's photo *An Abandoned House and Trees* (figure 5b) portrays uncut bushes and weeds next to an untended house across the street from her house. "*This house has been sitting there for at least 15 years but vacant,*" Juannette told us. She had been concerned for a long time that intruders could pass through this uncared-for space without her seeing them. Yet while the wild weeds blocked her view of the space, the sound these plants made had special meaning to Juannette:

> *[The trees] block a lot but you can hear the trees moving or wind blowing. If somebody's coming towards you, you could hear movement from weeds and trees... That's what I do—a lot of surveillance because I have to. I'm*

Figure 5: 5a (*left*): *Vacant House*, by Tammara. 5b (*center*): *An Abandoned House and Trees*, by Juannette. "This abandoned home is right across the street from my community garden. It has been trimmed back but somebody can still walk through. I can hear the trees and weeds moving." 5c (*right*): *Happy Space*, by Ethel. "Relaxation–self-explanatory".

> *out there gardening and you never know. But I never had anybody come approach me and try to harm me. But the thing I'm looking at is that I listen for the trees, I'm looking at the weeds... You have to use all your skills.*

The sound that Juannette listened to here signified encounters among the plants, the unexpected intruders, and Juannette herself. Being vigilant to these unexpected encounters makes listening something she "has to" practice. This sound further illustrates Juannette's negotiation of safety through navigating her seemingly conflicting relations with the weeds. On the one hand, the untended weeds placed a safety hazard to Juannette's daily life, which in itself signals some broader systematic issues faced by Detroit neighborhoods such as the ongoing disenfranchisement of the neighborhoods and the lack of support from the city. On the other hand, Juannette also had to compromise and work with the weeds to achieve a sense of safety in this material condition. And Juannette's practice of noticing can be viewed as the very manifestation of this conflicting relationality and the ongoing negotiation of safety within these relations. She continued:

> *I pay attention every day because you have to be in a good mood to be able to hear things or you just let it pass. So because I don't want to get hurt and I don't want to hurt anybody, so I listen quite a bit.*

Everyday noticing, in this sense, requires residents to be always vigilant to the abnormal while also staying attuned to the multiple rhythms. As Juannette indicated, listening is affective and emotional. One has to be in a good mood to be sensitive and attentive enough to notice, yet maintaining constant vigilance and sometimes feeling concerned (as shown in Tammara's story), could be emotionally consuming in itself. This situational relationship between noticing and emotions could also be found in our engagement with Ethel.

It was a weekday afternoon when we visited Ethel for the first time. She invited us to sit in her yard around which she was building new fences to block the sound of speeding cars in the neighborhood (figure 5c). "*Sound is everything to me*," said Ethel when we were discussing what makes her feel safe at home. Ethel described herself as "*a careful listener*" who always listens to people and her surroundings. When we asked her why listening was important to her sense of safety, she took a deep breath and said, "*Alex, close your eyes and just relax. What can you hear?*" We followed her and closed our eyes. Indeed, the temporal and spatial dimensions, as well as the actors within this time-space that one could sense, were reconfigured through listening. The birdsong, the construction noise from a house nearby, the sound of cars driving by the neighborhood, and the distant sound of some neighbors' chatting became immediately prominent—they were all entangled, yet each had its own rhythms. In thinking with Anna Tsing [100], the safety assemblage is indeed a "polyphonic" gathering of autonomous but intertwined melodies, resulting in moments of harmony and dissonance. For Ethel, each of these ambivalent sounds indicates different actors' own trajectory of normalcy and peace, be it her neighbors living their lives or the birds singing in groups. Being relaxed on the swing in her "*happy space*" and attuning herself to each of these entangled rhythms constitutes moments of "*peace and tranquility*."

In contrast, listening affords Ethel very different meanings of safety and associated emotions when she is inside the house alone. During another visit, Ethel invited us into her two-floor house. The house was so quiet that only the sound of a clock ticking was audible. When she sleeps on the second floor at night, listening becomes the only way for her to navigate safety: "*When I'm sleeping, I'm blind, but my ears are still on.*" In the quiet home at night, any unexpected sound stood out and would catch her ears. She described to us that any sound—be it glass breaking or the front door opening—would wake her in a state of alarm, ready to confront the situation at hand.

Residents' everyday noticing, as shown in Ethel's case, involves different forms of listening and seeing, different things to hear and see, different times and spaces in which to listen and see, and different emotional states that emerged from listening and seeing. Whether seeking a state of peace that's free of fear or constantly being prepared for unexpected safety hazards, the multisensorial processes of noticing have been woven into residents' in situ and ongoing navigation and negotiation of safety.

4.3 Contrasting Viewpoints of Everyday Noticing and Large-Scale Surveillance

In this section, we put residents' acts of everyday noticing in conversation with their perceptions of large-scale surveillance infrastructure. We particularly draw attention to how residents perceive the viewpoints embedded in everyday noticing and large-scale surveillance differently.

4.3.1 Everyday Noticing as a Collective Practice. Residents' practice of everyday noticing is networked rather than one-directional. Arlene described this mutual process of noticing, "*Sometimes I feel like my neighbors look after me and sometimes I look after them. It goes both ways.*" Put differently, what is equally important to noticing is being noticed. Arlene further articulated:

> *Safety to me is knowing neighbors, the neighbors are the eyes and the ears. You'll have like a text message [from your neighbor] ..., "There's this guy walking down the street, he's not from here. He's looking [at] all the driveways." That's safety, because we're looking out for each other. You know, that chain of communication.*

"The neighbors are the eyes and the ears" is especially telling here. As noted earlier, the senses of sight and sound were key to everyday noticing. As Arlene suggests, everyday noticing is not only an individual practice constrained by one's immediate environment. Neighbors' "eyes and ears" extend the multisensorial noticing from one individual's single viewpoint to a collective of viewpoints that are connected through sociotechnical means. In the context of urban neighborhoods, everyday noticing becomes a networked practice that transcends spatial limitations.

On the flip side, when everyday noticing is not accompanied by being noticed, the relational aspect of safety could be called into question. In the photo *Anyone Watching* (figure 6a), Juannette raised concerns about not being noticed or looked out for:

> *Well, I took that one just to show how quiet it is, nobody's on the block ever, there's never anybody out. So we really don't have anything to worry about, we don't fear people, but there's nobody outside. And when there's nobody outside, who's watching? That's one of my concerns. [Who's] watching for me in the garden? I'll be by myself, for anybody walking down the street maybe somebody sees them getting attacked or whatever, but nobody's watching... I'm thinking nobody's watching but probably everybody's watching... I don't know which one is true.*

Juannette cited the Bible verse, "Am I my brother's keeper?" (Genesis 4:9), to emphasize acts of noticing as the foundation for mutual aid and support in the community, especially when one is in vulnerable situations. If safety is relational and the sense of safety is conditioned by the dynamic entanglement with other actors as we have unpacked earlier, then the need for being noticed speaks to why one's sense of safety is inseparable from these reciprocal relations and the "response-ability" to each other.

In contrast, this "response-ability" was not seen in Toya's picture that depicts a surveillance camera in her neighborhood. There was another surveillance camera at this intersection that was removed a while ago. Toya was once interested in finding out if the camera had documented any evidence of racist graffitiing and house break-ins happening in her neighborhood. Yet she was not able to find any public information on who was behind that now removed camera:

> *It was really scary to me when we couldn't identify who was in charge of that footage. That's strange. I mean, it's one thing to be surveillance and another thing to be surveillance, and no one seems to know who's doing the surveillance.*

Toya's experience illustrates a kind of information and power imbalance embedded in large-scale surveillance. It is exactly the "gaze from nowhere" [47] that makes it hard for residents to hold the infrastructure accountable. Indeed in her case, someone was watching her at the intersection (if we quote Juannette). But whether she would be noticed by the surveillance infrastructure, or whether the surveillance infrastructure would be "response-able" if she was in vulnerable situations is unknown.

4.3.2 Local Situated Knowledge in Everyday Noticing. Several of the examples above have revealed how residents' everyday noticing focused on things that are unusual in their environment. Yet, being able to notice the abnormal requires one's situated knowledge as to how an ordinary day should look, sound, and feel, as well as how normalcy looks or sounds for each actor in the safety assemblage. All participants repeatedly emphasized the importance of their local knowledge in the navigation of safety. Most of our participants have spent decades, if not their whole lives, in their neighborhood. To them, this local knowledge—who everyone is in the neighborhood, which cars they are driving, what time of day they go to work and come back home, what time their house is supposed to be lit up, and what time their children walk by and go to school—all stems from their lived experiences and remembrances in the neighborhood.

When we first saw Ryn's photo *Speeding Cars* (figure 6b), we thought it was a picture of her quiet block. In fact, it was quite the opposite. Pointing to the trees in the background of the photo, Ryn told us that the street in front of her house is connected to a major road in the city and always has high traffic: "*It was a still photo, but yet there were at least six cars.*" Knowing about the constant busy traffic with speeding cars made Ryn particularly cautious and concerned when her family and neighbors, especially children in her neighborhood, were on the street:

> *I'm always very concerned just about this traffic... That's a safety issue for us. And just sharing something personal with you, when I was growing up, I had a younger brother who was killed, who was struck by a car and died. So, my point of safety has to do with really sharing with the children, "Look, it's my responsibility to help keep you safe."... So, I generally will have the dogs out, and got to help to look out for them, and they get to know them, but it is about a community looking out.*

In this story, Ryn talked about how her personal memory and experience informed her practices of noticing. It also illustrates how her dogs' viewpoints and ways of knowing contribute to everyday noticing as a collective process. One's everyday navigation of safety is thus dependent on the situated knowledge and ways of knowing of others in the local safety assemblage. In contrast, this vernacular knowledge of local relationality is not present in large-scale

Figure 6: 6a (*left*): *Anyone Watching?*, by Juannette. 6b (*center*): *I Always Feel Like, Somebody's Watching Me!*, by Toya. "Cameras surrounding us is common and we often know who or what entity is playing Big Brother, but how uncomfortable when the authorities can't identify who is behind the camera." 6c (*right*): *Speeding Cars*, by Ryn. "High traffic volumes on a residential street with lots of children. Cars speeding by one another (in a hurry)—many cars coming, i.e., five fast-moving cars (no speed bumps due to the fire route). It's a win/lose situation."

surveillance infrastructure. For example, when comparing smart security cameras' surveillance with residents' everyday noticing, Lenderrick reflected on his concerns:

> *Well, there's two aspects of security and the cameras. The community, I understand. But then you have the cameras being looked at by ... the security company. They don't live in the neighborhood, so what they see is interpreted differently than our neighbor would.*

He continued and further explained the difference:

> *Because you would see your neighbor, you know that's my neighbor, and my neighbor is taking out the trash or whatever, going to the back. What [the surveiller] would see is like, there's a young man approaching the back of the house. They see it more of a danger as you wouldn't see it as a danger because you already know them... Some of those companies are not even in the country. They're looking at it [with] a whole different outlook of what is actually going on on their camera than a community person would.*

As Lenderrick sharply pointed out, in large-scale surveillance infrastructure, local viewpoints rooted in lived experiences are replaced by a viewpoint at a distance. Even though residents' everyday noticing and surveillance infrastructure seemingly share the similar visual process of "seeing," an ordinary situation could be misinterpreted as a safety threat when removed from its entangled relations and treated as a stand-alone unit of examination. Another participant, Brenda, similarly pointed out how she would give her neighbor with mental health challenges the benefit of the doubt, whereas he might be viewed as a threat through the city's Green Light cameras:

> *When you're dealing with people, you have different personalities. We have a lot of mental health issues over here too. And if I see one of my neighbors and he might be in the camera going off and cussing and having a fit, but then if I know my neighbor, I might know well, he's actually really a good person, but he's having a bad day because he's dealing with some mental [health] type [thing], you know what I'm saying?... I'm just saying the Green Light can possibly be selective of the full picture.*

Lenderrick's and Brenda's comparison of everyday noticing and surveillance infrastructure is particularly illuminating to rethink the conflation of situated safety and large-scale surveillance; we further unpack this conflation in the discussion section.

5 DISCUSSION: SAFETY THROUGH EVERYDAY NOTICING

Eastside Detroiters' photos and stories offer a view into how they navigate safety in their everyday lives. These photos and stories are not simply anecdotal. The presentation and analysis of participants' photographic stories reveal safety as complex a relational phenomenon rather than a pre-existing or predetermined state. Residents' sense of safety was not linear. Instead, it is precisely the broad meanings of safety that we have shown—from achieving bodily autonomy and avoiding harms at home and in the public, to seeking peace of body-mind—that highlights its multiplicity and complexity in practice (RQ1). As we saw, the meaning of safety stems from the in situ socio-material relations amongst an assemblage of actors and the particular time and space. The meaning and achievement of safety, for residents, were produced and negotiated within the ever-shifting relationality with the safety assemblage through the practice that we called "everyday noticing," building on Tsing's concept of noticing [100]. The multiplicity of safety and practices of navigating safety in fact illustrate why equating surveillance and control with safety is inherently reductive and limited.

Everyday noticing—a multisensorial and mundane process of observing and responding to one's surroundings, encounters, and entanglements for achieving embodied safety—is deeply rooted in residents' relations with other human and non-human actors. Introducing everyday noticing into HCI scholarship about safety redirects our attention to both the voices and the lived experiences of ordinary residents (in our case, middle-aged and senior Black women and men in Detroit, a city that manifests varied social and racial inequalities in modern American society [57, 95]) and situated ways of sensing and negotiating the very multiple meanings of safety in the more-than-human assemblage.

In this section, we take a step back and reflect on the significance of everyday noticing for HCI and the understanding of large-scale surveillance (RQ2). We first synthesize our findings and discuss how everyday noticing is simultaneously a skill for survival and an act of care for Detroit residents. Thereafter, we return to the aforementioned pervasive *surveillance-as-safety* regime. Placing our findings in conversation with STS and HCI scholarship, we propose the concept of *safety-through-noticing* as an alternative to *surveillance-as-safety*. We show how this call-to-shift can open up opportunities for us to trouble and confront the myth of promoting safety through surveillance technologies. In doing so, we offer insights into why large-scale surveillance infrastructure is inherently limited in addressing the social needs of safety. We conclude by unpacking how *safety-through-noticing* can inform future research and practice in resisting hegemonic reductive visions embedded in surveillance infrastructure and speculating about more ethical and responsible more-than-human socio-material configurations.

5.1 Everyday Noticing as a Skill for Survival and an Act of More-than-Human Care

Everyday noticing is first and foremost imbricated in lived materialities. Central to everyday noticing is its dialectical relations with the entangled relationality among all actors in the local safety assemblage. That is, what holds these relations within the assemblage of humans and non-humans together is the practice of everyday noticing on the one hand; yet it is these extricable relations that also enact and multiply the senses and sensibilities that make acts of everyday noticing meaningful on the other. Aligning with HCI's long interest in everyday social life as a site of inquiry [1, 81, 92, 93], everyday noticing extends the notion of noticing from a methodological commitment to the everyday setting. The everyday setting is often routinized, but it is often messy as well. In the site of everyday life, human and materials are in constant reconfiguration, and meanings and routines are in constant (re)negotiation [1]. Everyday noticing exists within this flux.

We therefore argue that everyday noticing is not only a technique and a sensibility but also a skill, a skill of survival amidst the structural violence. Recall that Juannette said that "you have to use all your skills" to notice, be it avoiding hurting or being hurt by others, or resisting the discourse of fear while pursuing peace and freedom. Similarly, Ryn discussed needing to keep an eye out because of her brother's car accident. As we have shown through our participants' stories, everyday noticing as a skill is cultivated by their situated knowledge and expertise from the past, which allows them to navigate why to notice, what to notice, how to notice (i.e., to see and/or to listen), and importantly, how to interpret what they notice. Everyday noticing can thus be understood as a temporal merging of the knowledge from past lived experiences, the present situation at hand, and prospective futures. As such, in thinking with Haraway [47, 48] and what Frauenberger termed the Entanglement HCI [39], we argue that everyday noticing is situated within—and does not exist without—the entangled relations that constitute the social worlds in which we live.

Importantly, the socio-material conditions of one's everyday life are also produced and reproduced by the broader socioeconomic and political structures [6]. In our context of Detroit urban neighborhoods, the discussion of the material world that our participants inhabit cannot be divorced from the intersectional oppression along lines of race, gender, class, and more [27, 28]. From racial redlining in the New Deal era, postwar deindustrialization and "white flight," racialized police brutality during the 1960s race uprising, to the ongoing austerity policies and the dispossession of the poor working class for downtown revitalization [57, 95], Detroit neighborhoods today embody marked social disparities and the material consequences brought about by ongoing racializing surveillance over Black people and communities [17]. This racialized lived materiality is evident in our participants' photos of vacant lots and abandoned houses. Thus, the safety assemblage should also not be construed as completely flat, and we must recognize the role that Detroit residents' individual and collective lived experiences, legacies of struggles, and fragile material realities play in shaping their everyday noticing as a survival skill.

Yet salient to residents' everyday noticing practices is their commitment to more-than-human care and community collectiveness. As we have shown, Tammara's watching school kids passing by an abandoned house, Ryn's dog Zeus's looking out for children on the busy street, and Loretta's turning vacant lots into community gardens that bring animals, plants, and people together all signify the care *for*, *through*, and *with* the often neglected people and things in the more-than-human safety assemblage. Going along with Haraway among others, feminist scholar Puig de la Bellacasa conceptualizes the ecological matters of care and brings the discussion of care beyond the human-centered term [32]. She writes, "It makes of ethics a hands-on, ongoing process of recreation of 'as well as possible' relations and therefore one that requires a speculative opening about what a possible involves" [32, p.6]. Residents' everyday noticing in our work is thus rooted in this situated ethics of care. As moments of care, everyday noticing orients toward maintaining relationality and navigating compromised safety in this "broken world", a world characterized by breakdown and erosion rather than progress and growth [56], and in our case, a world constituted by the historical and ongoing Black disenfranchisement. At the same time, it also entails speculating about the possible relations and material configurations in which new meanings of situated safety and ontological possibilities could emerge.

Our more-than-human intersectional lens offered a unique angle to bring together the seemingly conflicting qualities of everyday noticing as a skill of survival and an act of more-than-human care. In this light, we think of everyday noticing as an ontological commitment through which one's ways of being and living are (re)enacted in relation to others. One might consider everyday noticing as complicit in not attending to the "root causes" of crime and, in a

sense, reproducing social prejudices similar to neighborhood watch programs that work alongside policing institutions [43, 90]. To be sure, we do not assert everyday noticing as a community-based project of control or a remedy to the structural oppression and violence in urban neighborhoods at large. Yet we must recognize that everyday noticing described in this work operates within the already othered space and bodies discursively and materially formulated by racializing surveillance and control. By foregrounding acts and stories of everyday noticing, we aim to draw attention to local ways of knowing and living with different senses of safety in urban neighborhoods that are rendered invisible through (and simultaneously conditioned by) "the conquering gaze from nowhere" [47]. It aligns with Black feminist epistemologies of contending with racializing surveillance and the naturalized criminality of Blackness [5, 17] by making visible the Black and brown community's self-determination and search for autonomy under the often constrained sociotechnical, political, and economic conditions and struggles that our capitalist and racialized society has produced.

5.2 Unseeing Surveillance-as-Safety, Turning to Safety-through-Noticing

Everyday noticing is also a site of critique. Central to this paper is the understanding of *safety-through-noticing*, where the relationship between safety and everyday noticing is multi-layered and multivalent, and the meanings of safety and the practices of noticing are multiple themselves depending on the entangled relations within particular socio-material configurations, the particulars of time and space, and so on. Engaging with the multiplicity and entanglement embedded in *safety-through-noticing*, we can generate and situate critiques of the predominant *surveillance-as-safety* approach that we unpacked at the beginning of the paper, where both the surveillance and safety are operated through a reductive and exclusionary logic of racialization [17].

Racialized logic embedded in large-scale surveillance infrastructure relies on abstraction and othering via visualization and containment. This means constructing and stabilizing boundaries around subjects and categories of race [12, 89]. Rationalized individuals, animals, numbers, and spaces all come into being as self-contained units to be seen by anyone or "no one" through what Monahan calls "objective vision" [73, p.7] or what Daston calls "machine objectivity" [30, p.599]. In thinking with Browne's digital epidermalization and racializing surveillance [16, 17], Black lived experiences are folded into reduced Blackness, which is often naturalized as criminality that needs to be contained under the rhetorics of promoting safety through sociotechnical surveillance infrastructures. Our work, to this end, offers an opportunity to re-embed the objectified Black experiences back to the entangled relations that produce existence.

For example, Ryn's dog Zeus offers therapeutic support to community members with severe mental health challenges—these entangled relations renegotiate the boundaries around being and living with mental health challenges. In Mol's words, "To be is to be related" [72, p.54]. If under *surveillance-as-safety*, one asks how to profile and contain mental health crises, then more-than-human intersectionality allows us to ask questions like, Why do community members with mental health issues become relaxed and talkative with Zeus but become agitated and violent when confronted by the authorities? Unseeing the misguided modernist lenses embedded in *surveillance-as-safety* [30], in this light, invites us to engage with a wide range of experiences and practices of everyday living and also otherwise racialized and othered peoples' and communities' entangled relations with other human/non-human actors and the material. Unseeing *surveillance-as-safety* is thus a call for stepping out of the taken-for-granted "gaze from nowhere" [47, 89], while committing to noticing like a resident, noticing like a dog, and thus, perhaps, noticing like the otherwise othered and invisiblized.

With *safety-through-noticing*, we see residents relying on their past experiences and a collective of sensing to make sense of their entangled relations and surrounding situations, and thereby navigating the sense of safety from within. No matter if the meaning of safety lies in avoiding bodily harm or seeking moments of peace, noticing depends on different senses and sensibilities that attune to endless entanglement and often neglected things. For example, Tammara pays attention to the minor changes in the boarded houses, and Juannette talks about how different sounds produced by weeds allow her to stay with uncertainties. Admittedly, what large-scale surveillance infrastructure and what residents notice are sometimes overlapping—a young man approaching the back of the house, or a man's breakdown in front of a camera. As Lenderrick and Brenda articulated, it is their situated knowledge of the neighbors and their normal everyday rhythms that allow them to make sense of these visions. Yet when these bodies and behavioral traces are parsed by surveillance infrastructure as stand-alone information points for analysis at the distance, the particularities that the young man is a neighbor or the man is struggling with ongoing mental-health issues are not attainable or important in the power's gaze embedded in the large-scale surveillance. We argue that it is the replacement of a collective of local viewpoints rooted in situated experiences and entangled relations with the power's gaze at a distance that differentiates the visibility of large-scale surveillance infrastructure from the distributed sensibilities of everyday noticing. This difference is exactly what Monahan called "a violent parsing of the world that constructs elements as separate from context and subject to manipulation" [73, p.7].

Therefore, turning to *safety-through-noticing* is essentially an invitation to return to the local—local and communal practices, knowledge, sensibilities, and potentialities—from the large scale [37, 103]. Returning the local requires us to engage with a wider range of lived experiences between humans, non-human things, and relational meanings and forms of safety. Indeed, meanings of safety and practices of everyday noticing we observed would be hard to replicate and rationalize at different times and spaces, or they were never meant to be. For example, it would be misguided to imagine allocating portable vegetable bags like Tammara's to all vacant gardens around the city of Detroit; it would also be impossible to reproduce the weeds that Juannette attunes to in her navigation of safety. Building on feminist scholars, noticing has always been a site to critique scale and scalability [98, 100]. In Tsing's critique of "scaling up" (i.e., universalizing and making scientific knowledge applicable on vast scales), she aptly points out that noticing cannot be "scaled up." By definition, scalability attempts to create "expansion without the distortion of changing relations" [100, p.64]. In other words, scalability requires that individual actors are immune to indeterminate and spontaneous encounters

while remaining divorced from their surroundings, which in fact underpins the logic of *surveillance-as-safety*. Scalability projects seek to banish diversity and changes [98]. Fixating the fluid meaning of safety to the imputed criminality of Blackness and deploying large-scale surveillance for this reduced safety serve to protect whiteness from being interrogated by other categories. In this sense, *safety-through-noticing* cannot be and is not meant to be scaled up. Taking a step further, we argue that it is the possibilities inherent in *safety-through-noticing* that we observed through residents' photographic stories that illustrate the limited reach of that large-scale *surveillance-as-safety*. Put otherwise, residents' photos and stories constitute powerful counternarratives to the pressing premises of delocalization and the ontology of separation reinforced in our modern capitalist society.

Safety-through-noticing, in this light, opens up new opportunities to rethink the design for safety in HCI. It shifts the focus from identifying, tracking, and containing the othered and racialized bodies and behavior traces, back to supporting the practices of everyday noticing in which boundaries among entangled relations are (re)negotiated and the meaning of safety is produced. In addition, this shift also opens up the seemingly linear and stable boundaries around the concept of "safety," allowing us to engage with how different senses, sensibilities, and affects shape the fluid and embodied forms of safety. As Cunningham and colleagues aptly ask [29, p.12], "How can we work without a problem?" Instead of designing new modernist solutions to address safety "problems," future designs in this domain should be redirected to supporting relational ontologies and autonomy within local communities on the one hand and resisting the ongoing epistemic and ontological violence (re)produced by surveillance technologies on the other [29, 37]. Through a more-than-human intersectional lens, we in HCI should be able to continue to make visible counter-narratives and lived experiences to thwart the hegemonic *surveillance-as-safety* and account for *safety-through-noticing*, as what we aimed to do through the commitment of this photovoice project. This will guide us moving toward imagining a new more-than-human world, or pluriverses—"a world where many worlds fit" [37, p.xvi] that put the local and communal relationality to the fore and that no longer center on prescribed fear.

6 CONCLUDING REMARKS

We conducted a photovoice study in collaboration with Eastside Detroiters to capture their lived experiences of navigating personal and community safety. In light of the historical dispossession and the ever-expandingsociotechnical surveillance infrastructures in Eastside Detroit neighborhoods, our photovoice project created a shared space that allowed residents, community organizers, and researchers to encounter one another. Residents' photographic narratives unveiled acts of "everyday noticing" in negotiating and maintaining their intricate and interdependent relations with humans, animals, plants, things, and spaces, which highlighted nuanced meanings of safety. Everyday noticing is situated in residents' lived materialities on the one hand, and a site of critique on the other. By proposing an epistemological shift from *surveillance-as-safety* to *safety-through-noticing*, we open up spaces for both interrogating the limitations of large-scale surveillance and identifying new opportunities to return to the local when designing for safety.

Our work features stories about safety and surveillance from only eleven Black mid-aged and senior Eastside Detroit residents, most of whom are women. Yet focusing on these perspectives is critical given that the lived experiences and situated knowledge of this demographic have long been rendered invisible in academic and popular discourses. Going forward, it is important to invite more residents to this critical conversation around safety and surveillance and to further explore visual storytelling as means for such engagement. It is our hope that the notion of everyday noticing and the call to shift from *surveillance-as-safety* to *safety-through-noticing* would offer useful language for future researchers, practitioners, and organizers to confront the rhetorical tool of justifying and expanding large-scale surveillance infrastructures.

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