Research Statement | Ellen Simpson

My research investigates the impacts of sociotechnical systems on people's sense of self and the rhythms and routines of their everyday lives, such as how algorithms shape and inform how people see themselves (Simpson & Semaan, 2021)and impact people's everyday routines (Simpson et al., 2022).   I have explored these experiences with several different groups: historically marginalized communities (LGBTQ+ people, people with ADHD and Autism), expert communities of users (user-generated content creators), and working communities (visual artists). **My research focuses on the interrelationship between the everyday work and routines of people, and how people draw on sociotechnical systems in these daily interactions to inform how they engage with their identities, communities, and the technical systems upon which they work.** Through this work, I develop community-driven solutions to improve experiences for individual users who work by, on, and through these sociotechnical systems. I explore how people work to improve, adapt, and transform sociotechnical systems for themselves and others in ways that push back against the normative logics embedded into their design and functionality.

I work at the intersections of Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW), Media Studies, Cultural Studies, and Science and Technology Studies (STS). Through an examination of both everyday people and those who would be considered edge cases, **I seek to understand how people draw on socio-technical systems in daily routine to inform, adapt, or alter how they engage with their creativity, identities, communities, and the technical systems upon which they work.** While I take a problem-centric approach to research, I draw on my background in Political Science often. I underpin my work with practical applications of theories of power and resistance to the normative logics of society by examining edge cases and experiences from multiple perspectives. I use a variety of methods to approach research questions, from in-depth interviews to content analysis to topic modeling and other big data approaches. My work contributes to theory and practice, where I offer both critique and practical guidance to address research problems.

I have published at top-tier peer-reviewed computing venues, including first-author papers at Human Factors in Computing Systems (CHI), Computer Supported Cooperative Work and Social Computing (CSCW), and the International Conference on Supporting Group Work (GROUP). My work has also been published in top peer-reviewed journals, including *New Media and Society* and *Policy & Internet*. **At GROUP '23, I received a Best Paper Award, which was one of the two best paper awards given.** During my graduate studies, I have published eight full papers, four of which were first-author papers – 6 in journals and 2 in conference proceedings. In HCI and Social Computing disciplines, conference publications are as impactful as journal publications. According to Google Scholar, as of September '23, I have a citation count of 186 and an h-index of 5. My publications appear on syllabi at The University of Colorado Boulder, University College London, Northeastern University, The University of California Los Angeles, The University of Washington, and The TikTok Cultures Research Network Initiative. In the next sections, I discuss my research projects, followed by an outline of future work.

Research Projects

My research focuses on the routine, everyday experiences of people working with, on, and through sociotechnical systems following three key modes of inquiry: (1) how individuals experience sociotechnical systems and what happens when those systems do not support their needs; (2) how individuals adapt, repair, and repurpose technology infrastructures to better support their needs; and (3) how individuals and communities generate resilience with and through sociotechnical systems.

1. Routine Everyday Experiences: Typifying the Mundane through The Examination of Breakdowns
Social computing research sheds tremendous light on the potential harms, risks, or benefits of technology through the examination of users (e.g., new mothers) or circumstances (e.g., gender transition) that represent edge cases for which a system and its designers must account. In my research, I reverse this paradigm, and instead focus on the everyday routines

that people have working with and within sociotechnical systems to find moments of breakdowns. Typifying the everyday situates the ordinary, rather than the extraordinary, in the foreground of my research. In my work, I have explored and typified the everyday routines of online content creation through an interview study of people who make and share videos on TikTok (Simpson et al., 2023; Simpson & Semaan, 2023). In foregrounding everyday experiences, I revealed the tensions and moments of breakdown experienced by creators with TikTok's infrastructures for accessibility (Simpson et al., 2023), as well as creative, professional, and social video making (Simpson & Semaan, 2023). These breakdowns highlight how much additional work is required for creatives to adapt their routines to account for breakdowns, and led to recommendations for the HCI community to rethink how we talk about the work that goes into producing the user-generated content that underpins a great deal of HCI research.

2. Building Infrastructures: (Re)Appropriating Technology for Support

In exploring people's everyday routines, I surface the relationships that people have with infrastructure – the underlying structure upon which society or any large-scale system functions – as people often draw on infrastructures to enact their routines. My research has explored moments where people or communities are working to repair, revise, or create entirely new infrastructures, which allow for the continued or renewed enactment of everyday routines. Through these examinations, I have found moments where infrastructures for support have failed communities, sometimes in unique ways. For example, LGBTQ+ TikTok users generally found the platform to be supportive of their routine expression of their LGBTQ+ identity, however for some users, particularly those whose expressions of LGBTQ+ identity did not fall along white, cisgender, thin, and conventionally attractive lines, often struggled to see themselves in the LGBTQ+ people they saw on their feeds (Simpson & Semaan, 2021). These moments where sociotechnical systems present contradictions of benefit and potential harm are a recurring theme in my research, as they demonstrate the underlying power dynamics that are designed into infrastructures. In showing how bias creeps into systems, I critically evaluate popular platforms and systems that have become part of the invisible fabric of our daily life for how benefit and harm are not always cut and dry, but rather subject to nuance.

3. Generating Resilience

In adopting an infrastructure-oriented lens to understanding people's everyday routines with and within sociotechnical systems, I also reveal moments of individual and community resilience and resistance to hegemonic power structures embedded in society. In forwarding resilience, how one bounces back from threat or disruption, I operate within the contradictions of sociotechnical systems for communities – particularly communities of marginalized people. For example, I revealed how, after being diagnosed with Autism, the Autistic community on TikTok discuss and revise their biographical narrative through the lens of an Autism diagnosis, which allows for resilience building through the co-construction of the #Autistok hashtag and community (Alper et al., 2023). This is a continued stream of research that expands into my Ph.D. research, where I examine how visual artists create resilience by drawing on sociotechnical infrastructures to forward their creative, professional, and financial goals.

Research Agenda

By studying how people *use* technology to shape their social world, as well as how technology, in turn, shapes people, I aim to improve how research approaches represent moments of breakdown in technology – particularly when technology breaks for some people, but not others. My goal is to expand how we think about technology design by challenging the social and cultural normative values embedded into technology design and functionality and expand how we think about use and functionality through the application of a variety of social, theoretical, and historical lenses.

I believe in a lab culture where people work together to tackle research projects. I plan on building a lab collaborative culture that draws on individual experiences and expertise to produce robust, mixed-methods research. Throughout my tenure as a graduate student, I've collaborated with colleagues across multiple institutions on research projects and want to foster this collaborative effort in my students as well. Below I outline future research opportunities I want to pursue:

Generative AI in Routine Creative Work

Emergent during my dissertation interviews with visual artists who share and sell their art on various social media platforms was a growing concern over AI Art. As this concern is echoed in other creative sectors (e.g., creative writing, and marketing), I want to explore how generative AI is shaping the landscape for routine creative work across multiple contexts of creativity. Additionally, I want to work with these creative communities to further understand the needs of artists when it comes to generative AI, and how training sets for such AI can be produced ethically. I plan on employing focus groups, interviews, and speculative design workshops to continue my work in this area.

Unpacking Identity in Sociotechnical Systems

A running theme in much of my graduate career is focused on understanding how identity is embedded into the sociotechnical systems by and through which people go about their daily lives. I want to continue to explore these systems and am particularly interested in the tensions between how a person sees themselves, and how they are constructed within sociotechnical systems. I want to examine the experiences of LGBTQ+ teenagers and adults navigating sociotechnical systems before they come out, as well as continue my collaboration with neurodivergent people using these systems to explore their experiences prior to diagnosis. "The algorithm knew I was __ before I did" is a common meme across many social media platforms. I want to unpack these experiences to help drive and develop guidance for teens and young adults around algorithmic literacy. I envision collaborations with these communities to facilitate community-based interventions, as well as insights from topic modeling, interview data, and content analysis.

Empowering Communities through Community-Based Technology Education

Over the past two summers, I worked with first-generation college students for a summer intensive, Pathways, hosted through the College of Media, Communication, and Information (CMCI) at CU Boulder which is designed to help students with backgrounds like my own feel comfortable at universities. Continuing to promote opportunities where the invisible curriculum of the academy is demystified is a key reason why I want to become an educator. I want to find community-based needs for technology education and work with my research community to empower historically underserved communities (e.g., indigenous, migrant) through need-driven technology education. In developing novel approaches through community collaboration, I want to explore how technology is used by these communities, and learn from these communities what is needed from their technology, and work with the community to co-design and prototype these tools in a prolonged and sustainable fashion.

References

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