RESILIENCE

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Contents

Paper & PechaKucha Session

Talking Resilience: Transformative Power of Shared Narratives

Cultivating Resiliencies for All: The Necessity of Trauma Responsive Research Practices *9*
Matthew Bernius & Rachael Dietkus

Mapping the Messy: Storytelling-as-Resilience, Reframing, Academia-as-Fieldsite *35*
Lisa Koeman

Laughing All the Way to EPIC *36*
Evan Hanover

Paper & PechaKucha Session

Adaptive Tools for Resilient Futures

Theory Instruments as Tangible Ways of Knowing *38*
Jessica Sorenson, Mette Gislev Kjærsgaard, Jacob Buur, Mary Karyda, Ayşe Özge Ağça

Beyond Zoom Fatigue: Ritual and Resilience in Remote Meetings *56*
Suzanne Thomas, John Sherry, Rebecca Chierichetti, Sinem Aslan, Luminita-Anda Mandache

The Ethnography of a "Decentralized Autonomous Organization" (DAO): De-mystifying Algorithmic Systems *74*
Kelsie Nabben & Michael Zargham

"Buy now, pay later" as Resilient Credit *98*
Rachel Aalders

Show Must Go On: How Can Ballet Help Us Strengthen Ethnographic Practice? *99*
Almina Karya Odabasi

Paper & PechaKucha Session

Creating More Resilient Futures

Rehearsing Imagined Futures: Creative Performance as a Resilient Process among Refugees *101*
Nicole Aleong

Building Resilient Futures in the Everyday: Virtual Worlds and the Social Resilience of Teens During COVID-19 *117*
Julian Gopffarth, Rebecca Jablonsky, & Catherine Richardson

Beneath the Hype: Self-Ethnography to Explore the Human Possibilities within NFT Technology *137*
Jake Silva

Becoming Digitally Resilient: Understanding the Gap between Online Government Services and Low Ability Users *138*
Yoni Lefevre & Dorota Gazy

Navigating Matters Charged with Controversy *139*
Stefani Bachetti

Case Study Session

Ethnography Leading Social Change across Public and Private Sectors

How a Government Organization Evolved to Embrace Ethnographic Methods for Service (and Team) Resilience: The Case of the Canadian Digital Service *141*
Mithula Naik & Colin MacArthur

Designing and Envisioning a More Resilient Social System: How to Start from What's Good to Create Something Better in Public Services *152*
Sofia Carvalho

Dismantling Stereotypes: Taking an Inside-Out Perspective to Building Better Representation in Advertising for Unilever *164*
Stephanie Barrett

Designing and Conducting Inclusive Research: How a Global Technology Company and an Online Research Platform Partnered to Explore the Technology Experiences of Users who are Deaf and Hard of Hearing *176*
Dana Gierdowski, Karen Eisenhauer, & Peggy He

Paper & PechaKucha Session

Critical Perspectives on Embracing Resilience

Jobs Not to Be Done: Anti-Work Politics and the Resilience of Mutual Aid *194*
Todd Carmody

Against Resiliency: An Ethnographic Manifesto *202*
Lauren Rhodes & Jillian Powers

Beyond Representation: Using Infrastructure Studies to Reframe Ethnographic Agendas and Outcomes *220*
Karl Mendonca

Resisting Resilience: An Anthropologist's Paradox *231*
Nadya Pohran

Social Resilience *232*
Jenny Rabodzeenko & Kelly Costello

Resilience: Lessons from a Period of Disruption *233*
Traci Thomas

Paper & PechaKucha Session

Resilience in Acute Contexts

The Giving Caregivers: Resilience as a Double-Edged Sword in the Context of Healthcare *235*
Juliana Saldarriaga

Amplifying Resilient Communities: Identifying Resilient Community Practices to Better Inform Health System Design *245*
Romit Raj, Babitha George, Cristin Marona, Rebecca West, Anabel Gomez, Tracy Pilar Johnson, Aditya Prakash, Sunny Sharma, Ayushi Biyani, Brittika Barua, & Cal Bruns

With the Phone in the Field: Making the Ethnographic Toolbox Resilient to Change *270*
Signe Helbo Gregers Sørensen

The Myth of the Pipeline Problem: Creating a Diverse and Thriving Team *271*
Shakima Jackson-Martinez & Kristin Zibell

Case Study Session

Practical Resilience: Ethnographic Impact that Endures in a Changing World

Navigating the Next with Resilience: Global Portfolio Strategy in a World of Uncertainty *274*
Giulia Gasperi

Creating Resiliency of Research Findings: Using Ethnographic Methods to Combat Research Amnesia *294*
Kristen L. Guth

Cybersecurity in the Icelandic Multiverse *317*
Meghan McGrath

Wildcards

New Words for New Worlds 337
Cato Hunt

Let's Shift Power Together! An EPIC Co-Creation Activity 338
Chelsea Mauldin & Natalia Radywyl

Preservation through Innovation 345
Zosha Warpeha

Tracing Neighborhoods in the Sky 346
David Goren

When Resilience Becomes Resistance: Recultivating Intimacy through Relational Mindfulness 347
Chelsea Coe & Jonathan DeFaveri

Silence: Divergent Listening in the Anthropocene 349
Grant Cutler

An Interactive Archaeology of the Laptop 351
Rita Costa, Pereira, Simon Roberts, & Charley Scull

Autoethnography and Whiteness 352
Kelly Shetron, Allegra Oxborough, & Nate Mahone

Fickle Futures: How Ford is Embedding Collaborative Foresight Work to Survive and Thrive in the Era of Electrification 353
Lydia O.Neill & Megan Anderson

The Climate Crisis as Learning Space 354
Floor Basten & Marc Coenders

Climate Dystopian Cocktail Hour 360
Sarah Brooks & Meghan L. McGrath

Building for Resilience 361
Preeti Talwai, Keita Wangari & Luca Paulina

PAPER & PECHAKUCHA SESSION

Talking Resilience

The Transformative Power of Shared Narratives

The contributions in this session highlight the power of collaborative, dialectic narratives in unpacking resilience. Through humor, storytelling, visualization, and linguistic craft, these contributions offer insight into various lenses that we can use as ethnographers to examine the work we do and the footprint it leaves on others and ourselves.

Curators: Letizia Nardi (*InProcess*), Gigi Taylor (*Indeed*)

Cultivating Resiliencies for All

The Necessity of Trauma Responsive Research Practices

MATTHEW BERNIUS, *Code for America*
RACHAEL DIETKUS, *Social Workers Who Design*

This paper is an exploration of trauma, how and why it can surface during ethnographic and qualitative research, and the importance of anticipating its potential presence. We present a model to help plan for and mitigate the risks of trauma and demonstrate how it fits into broader methodological discussions of conducting safer and more ethical, responsible, and humane research. We close by discussing one pathway for a journey from being sensitive and aware of trauma to actively responding to it at both the individual and organizational levels across your work.

Keywords: Trauma informed care, trauma responsive research and design, design research, ethics, qualitative methods

INTRODUCTION

To say that the past few years have been full of trauma feels like a bit of an understatement. As we write this paper, the world is two-and-a-half years into the global COVID-19 pandemic and learning to adjust to the next in an ongoing series of "new normals." COVID took the lives of at least six and a half million people across the world, caused a reverberation of destabilization to the families of those deeply impacted, and disrupted the function of everyday life in ways we are still coming to terms with and hoping to someday fully understand. There are also the ongoing impacts of political and civil unrest, ongoing wars, and climate injustices throughout many parts of the world. We've also watched and experienced the rise of extremist violence across the globe and closer to our home in the United States, we are experiencing a significant rise in political, police, and racialized violence.

While these endemics ruptured any illusion of stability in our lives, it's important to recognize that trauma was always already with us. The reality is that for many—especially those who are not White or male or straight or cis-gendered or have privileged socioeconomic status or are healthy or who speak English as a first language or are any countless number of other "othering" things—simply living in the world brings them into situations that create, reinforce, and maintain trauma. And that's before we get to those impacted by traumas caused by events beyond our control: a life-changing accident, a violent attack, or a loved one falling ill. In the United States alone, an estimated 60% of men and 50% of women will experience at least one trauma in their lives, with at least 6% of the population experiencing a clinical diagnosis of some form of Post Traumatic Stress Disorder (National Center for PTSD 2022). European estimates fall into similar ranges (Trautmann and Wittchen 2018).

Yet, for all this trauma surrounding us, it's only within the last few decades that we—as professional researchers, designers, and academics—began to seriously consider it as a topic of study. Even then, the conversation often focuses on trauma as an analytical category or, more methodologically, how we protect the people we study from trauma. While this is indeed important, focusing on the trauma of our research subjects ignores the fact that *we, as researchers, are also active participants in the research and design process, equally needing and deserving consideration, care, and protection.*

This paper is an exploration of trauma and why, regardless of the topic you are investigating, it is important to anticipate and plan for its potential presence in our participants, our colleagues, and ourselves. In what follows, we explore one model for understanding trauma and discuss why research encounters can create a space primed for its slow or sudden emergence. From there, we present a model to help plan for and mitigate the risks of trauma and demonstrate how that model fits into broader methodological discussions of conducting safer and more ethical, responsible, and humane research. Finally, we will close by discussing one pathway for individuals and organizations alike to journey from being sensitive and aware of trauma to actively responding to it. We conclude with a discussion of why now is the time to start this work and point to the next steps we can take as a community of practice.

As you read this paper, we urge you to pay attention to how your body reacts (physiologically) and feels (emotionally). Part of addressing trauma is becoming aware of how it surfaces as an integrated, embodied experience. For some, reading about trauma can cause moments of activation, such as discomfort, tension, or even physiological or emotional dysregulation. We encourage you to be aware and curious about any sensations you experience. If you find yourself having a strong reaction, we encourage you to take a break from reading and recenter yourself (for example, through a sensory exercise like focusing on items in a room of a certain color or reconnecting with the parasympathetic nervous system through deep breathing or movement). Cultivating an awareness of somatic responses, both in others and in ourselves, is a critical step toward cultivating a trauma responsive approach.

DEFINING AND THEORIZING TRAUMA

For a working definition of trauma, we turn to the words of Resmaa Menakem, an author, social worker, trauma specialist, and somatic abolitionist:

> Trauma is a response to anything that's overwhelming, that happens too much, too fast, too soon, or too long—[it is] coupled with a lack of protection or support. It lives in the body, stored as sensation: pain, or tension—or lack of sensation, like numbness (Menakem 2020).

In this biomedical and somatic model, when an overwhelming experience (or experiences) is unable to be metabolized, it becomes lodged within the body as trauma. That trauma can manifest itself in a wide variety of ways, including flashbacks, hypersensitivity to stimuli and emotions, poor emotional regulation, and other psychological and somatic responses. Long-term exposure to trauma literally changes the body, altering one's ability to process cognitive information, manage emotions, and navigate stressful situations (U.S. Department of Health & Human Services. 2022). It is also correlated with adverse health outcomes and raised risk for substance use and self-harm (Merrick et al. 2017). Trauma, whether at an individual or community level, is an integrated experience. There is no mind/body divide possible. Trauma is always something that is at once physiological, psychological, and emotional.

Ethnographic and qualitative social science explorations of trauma often fall into a few general and interrelated categories. More applied approaches, especially those involving public health research, look at trauma from an epidemiological point of view (Singer 1996). Others focus on the concept of trauma as a cultural category, examining the social processes through which trauma, and in particular Post Traumatic Stress Syndrome, was identified and pathologized. In this approach, the trauma becomes a lens for explorations of topics like humanitarian responses to disaster and violence and how they often lead to conflicts between local and western understandings of mental and emotional health (Breslau 2004; Hinton and Good 2015; Lester 2013).

Another common approach to exploring trauma is to see it as a sort of "engine" that (knowingly or unknowingly) powers cultural production and resistance. For example, in Aihwa Ong's "The production of possession: Spirits and the multinational corporation in Malaysia," the complex trauma of Malaysian women working under oppressive societal and factory conditions manifests itself in the form of spirit possessions[1] (Ong 1988). Other examples of this lens include Kim Fortun's exploration of how the rupture and trauma of two different catastrophic industrial disasters led to various forms of local organizing and resistance against Union Carbide in *Advocacy after Bhopal* (Fortun 2001).

While there is still much work to be done in these areas of inquiry, we choose to move in a different direction. This paper takes a much more intimate and methodological look at the production of trauma and how it can, does, and will continue to arise in the work of ethnography and qualitative research. As noted at the start, a key aspect of this is exploring the presence and impact of trauma in not just our research participants (as the above categories tend to do) but also in ourselves.[2] In this way, we are confronting a reality identified by Beatriz Reyes-Foster and Rebecca Lester in their anthro{dendum} essay "Trauma and Resilience in Ethnographic Fieldwork,"

> Ethnographic fieldwork can be, and frequently is, emotionally difficult for fieldworkers, who may experience either direct or vicarious/secondary trauma while in the field. Even under the best of circumstances, navigating a new field setting with little if any training on how to emotionally manage the many challenges inherent in fieldwork can be significantly destabilizing, and the effects of such experiences can be long-lasting. And yet, a culture of silence about the emotional toll of fieldwork and the importance of mental health has remained prevalent throughout our field (Reyes-Foster and Lester 2019).

Despite trauma's presence in the places we research and, if we are honest, in the places we live, learn[3], and work, how we deal with it remains under-discussed (at least in public conversations). Nadya Pohran's 2022 EPIC PechaKucha "Resisting Resilience: An Anthropologist's Paradox" puts this into stark relief. In it she recounts how her university was not equipped to help her process the field experience of watching someone die by suicide. Instead, her advisors praised her for "finishing her work on time and not disrupting her study plan." She also reflects on how other emotionally exhausting and potentially traumatizing aspects of her work are not discussed in professional spaces (Pohran 2022).

Beyond the stigma and discomfort traditionally associated to discussing mental health and mental illness, there are also discipline-specific reasons for the lack of engagement. For example, Reyes-Foster and Lester note in their essay that many ethnographically focused social sciences have not historically prioritized methodological training.

> Fieldwork [is] treated as a sink-or-swim proposition. Good ethnographers would succeed, and bad ones would fail. And while we were pushed to pursue anthropology "with stakes"—that is, an anthropologist that studied problems that mattered in some way, to someone—nobody talked about what it might mean to do this (ibid).

This lack of focus on preparing social science students to do fieldwork, especially with so-called "vulnerable populations," has also been noted in other qualitative research fields as well (Winfield 2021; Močnik 2020). Looking even more broadly at the other places where people learn the practice of research—from design and business schools to UX boot camps to "learning on the job"— there is no standardized approach to teaching trauma, not to mention ethical practice in general. *In fact, there is little-to-no guarantee that those topics are covered at all.*

We believe that it is impossible to responsibly conduct meaningful research without acknowledging and understanding the topic of trauma. And to truly begin that discussion, we start by recognizing one model for how trauma is embodied/re-embodied and experienced/re-experienced.

THE PRODUCTION AND EXPERIENCE OF TRAUMA

David Trickey, a mental health clinician in the United Kingdom, describes trauma as "a rupture in 'meaning making'" (Prideaux 2021). The ways you see yourself, the ways you see the world, and the ways you see other people are shocked and overturned. However, simply being overwhelmed by an event, or events, does not necessarily mean someone will be traumatized. For that acute stress to cascade into trauma, there is typically also a lack of protection or support, which otherwise would have allowed the individual or community to process the experience. Trauma (and traumatization) is often cultural and contextual. People can experience similar events and experience different outcomes based on their personal, familial, and cultural contexts. One person might be able to process the event in a way that does not lead to embodying it as trauma, while another may have a serious stress response, and another is significantly traumatized.

In biomedical framings[4] of trauma, it is often categorized by the type of initiating external stress experience that leads to the traumatization. Here are examples of some categories of trauma:

- ***Acute Trauma*** primarily stems from a single distressing event extreme enough to threaten a person's emotional or physical security. Examples include (but are not limited to) house fires, car accidents, physical assaults, etc.
- ***Chronic Trauma*** occurs when someone is exposed to multiple, long-term, and/or prolonged distressing events over an extended period. Examples include long-term serious illness, bullying, and experiencing significant ongoing food or housing insecurity.
- ***Vicarious trauma*** and secondary traumatic stress are two interrelated conditions stemming from indirect exposure to traumatic events. Vicarious trauma develops over time through continual exposure to the traumatic experiences of others. This can result in experiencing secondary traumatic stress symptoms of PTSD due to secondary exposure to a traumatic event. Secondary traumatic stress examples include front-line workers who work with people who are traumatized and researchers interviewing individuals on sensitive topics like domestic violence.
- ***Collective trauma*** occurs when direct exposure to a traumatic event(s) impacts a group of people, community, or society. Examples include slavery, a pandemic, and living in a community experiencing ongoing violence.
- ***Intergenerational trauma*** happens when the traumas experienced by one generation are passed on to the next. Examples include the impacts of addiction across multiple generations of a family and the ongoing impact of historical and present-day racism on members of Black, Indigenous, and People of Color (BIPOC) communities.

- ***Complex trauma*** is a result of exposure to varied and multiple traumatic events and/or experiences. Complex trauma can, and often does, combine any of the above forms of trauma. Examples include domestic violence, childhood neglect, and/or sexual abuse.

All these various forms of trauma can be created by both large and small events. It's easy to focus on the "big T" traumas—ones caused by experiencing dramatic events like natural disasters, war, or grave illnesses—but smaller, more personal events can still be traumatic for individuals or communities. For example, repeated exposure to microaggressions or other forms of psychological or emotional attacks, when combined with other factors, can easily become embodied as trauma that has just as much of a profound impact on an individual's ability to function. Unfortunately, it's not uncommon for people to suppress or deny the existence of trauma in themselves or others because it isn't linked to some significant big T event or because "others had/have it worse." Sadly, this sort of denial, self-shaming, and invalidation of "little t" traumas is often tied to those traumas becoming more deeply entrenched. It also can prevent people from recognizing the seriousness of the traumas they carry and seeking help.

For those with trauma, the past is always close to the present. As anthropologist Rebecca Lester writes:

> The specific event or series of events deemed traumatic are hardly 'over' once the events themselves cease. They are re-experienced again and again and again…. The psychological and physiological responses to the events are reactivated with each replay…. In this way, the traumatic events are not simply something in the past that the person is trying to 'get over' but become part of one's daily experience in the here and now. It affects how people relate to others, interpret new experiences, and imagine horizons for their future (Lester 2013, 757-8).

This process of re-experiencing trauma, typically activated by new stresses or interactions which lead to thinking about the previous experience, is called *retraumatization*. An individual's expression of trauma and retraumatization can manifest in many ways, including shortness of breath, accelerated heart rate, shaking, sweating, and/or tunnel vision. Trauma and retraumatization are often experienced as a somatic fight, flight, freeze, fawn, or flop reaction (Woodward 2020). Some people may withdraw into themselves, some will become agitated, and still, others may present as people-pleasing even when it might be to their detriment. Many will have difficulties processing information during this period. Retraumatization also leads to the trauma becoming further entrenched if the necessary supports for processing are lacking at that moment. It can also lead to acute health challenges. For example, people experiencing retraumatization are at higher risk for increased substance use to mitigate the feelings and, in some cases, self-harm (SAMHSA 2013).

To understand how trauma can emerge within a research engagement and lead to retraumatization, immediately following this article is an account of an interview "gone wrong." In it, one of the authors experiences feelings of helplessness related to hearing his participant share all the difficult life challenges they were facing due to living with a criminal record. Vicariously experiencing his participant's trauma and potential retraumatization activated the researcher's own trauma tied to a psychological and emotional breakdown that happened several years prior during grad school. At that moment, all those feelings of failure and alienation—and the imposter syndrome and shame they created within him—came flooding back as a panic attack. To frame what happened in clinical terms: secondary traumatic stress created by the interviewee's account led to an activation of the researcher's complex trauma.[5]

We have talked with many others who have had similar experiences while conducting research. The research encounter has the potential to create a trauma response in both the people being interviewed or observed and the people conducting the research. The next step of this paper is a consideration of why that is the case. What are the aspects of interviewing and other ethnographically derived methods that create the potential conditions for trauma to emerge in everyone involved in the process, and why does that happen?

BLURRED LINES BETWEEN METHODS

One of the primary biomedical treatments for embodied trauma is a common form of talk therapy called cognitive behavioral therapy (CBT). During psychotherapeutic sessions, clients, in collaboration with a licensed, practicing clinician or therapist, often engage in reflective personal storytelling. The goal is for the client, with the support of the clinician or therapist, to carefully re-experience and reflexively process traumatic memories. To guide the process, the clinician asks open-ended prompting questions, validates the client's experiences, and provides alternative or additional interpretations and ways to understand past experiences. Over time, the clinical treatments seek to help the client to attach different meanings and feelings to the recollection of past events, developing the skills necessary to develop hope for and resilience against future retraumatization and move toward healing.

Even if you have not personally experienced this model of therapy, its approach should feel familiar to anyone who has used ethnographically derived research methods like qualitative interviewing. Tad Hirsch documents in his 2020 paper "Practicing Without a License: Design Research as Psychotherapy" how research tools such as semi-structured interviewing and mirroring participant responses were directly drawn from psychotherapeutic techniques. Hirsch argues that qualitative interviews and other participatory research methods often strive to achieve three critical and interrelated aspects of the therapeutic encounter: *rapport*, *congruence*, and *empathy* (Hirsch 2020).

Rapport is the sense of connection and comfort between the parties. It is a topic that appears in numerous methodological texts, like Harry Wolcott's book *The Art of Fieldwork*, (Wolcott 2005) and is discussed in at least 48 essays and papers in EPIC's archive. *Congruence*, or "genuineness," can be seen as what helps facilitate that sense of rapport. For a therapeutic encounter to be successful, the therapist must engage with clients in a transparent and authentic way. Hirsch notes that the same is true in research encounters. Good research practices involve being "open with participants about intentions, goals, and emotional responses to their stories. This may involve researchers "sharing personal experiences or simply expressing emotions during interviews" (Hirsch 2020). Finally, both forms of encounters depend on the clinician or therapist leading the encounter to develop and express a form of shared understanding of the participant's experience, commonly referred to as *empathy*. While there has been a movement within the qualitative research community to critically reexamine the way empathy is deployed as a concept—for example, Maggie Gram's *N+1* paper "On Design Thinking" (Gram 2019) and Rachel Robertson and Penny Allen's 2018 EPIC Conference paper "Empathy Is Not Evidence: 4 Traps of Commodified Empathy," (Robertson and Allen 2018)—its cultivation remains an important component of many research and design processes.

Hirsch argues that there is nothing inherently wrong with cultivating rapport, congruence, and empathy. In fact, the shifting of focus towards these was in part tied to the work of feminist, indigenous, and other scholars and practitioners who have been advocating for more humane and equitable approaches to research for decades.[6] That said, it's critical to acknowledge how encouraging people to talk about past experiences and share unvarnished feelings while working to build a sense of authentic connection and shared understanding during a research interview creates the conditions for the resurfacing of trauma and, in some circumstances leads to the researcher essentially practicing therapy without a license.

We suspect many people reading this have experienced an interviewee jokingly—or perhaps not so jokingly—comparing a research encounter to a "therapy session." At times, it's easy to allow the two to collapse into each other, both in terms of asking open-ended questions about past experiences and trying to be supportive of their interviewee and validating the feelings that they are sharing.[7] However, despite the trappings of similarity, Hirsch reminds us that the two forms of encounters—therapeutic and research—have vastly different goals. Psychotherapeutic sessions focus on easing the client's suffering and facilitating steps toward healing. When the talk therapy process is successful, a client may partially or fully rebuild their ruptured world. While the precipitating events cannot be undone, the memories and the resulting trauma can be better integrated into the client's ongoing life experience. This focus on reintegration is not part of the typical research encounter. Rather, research sessions focus on collecting data to advance some form of study, project, product, or service. The degree to which the participant receives any psychological benefit from participating (beyond compensation) is a byproduct of the process and not the expressed goal.

Further, while talk therapy is helpful for some people, it is not necessarily a path to healing for others. Some studies have shown that clinicians and therapists estimate that between five and ten percent of clients are actively harmed by the talk therapy process (Boisvert and Faust 2003). One of the reasons might be the limiting nature of talk therapy and the overemphasis on brief, interventional programs that are primarily intended to be more prescriptive and can often recklessly overpromise a faster track to healing. Although effective for some, as noted above, this limiting approach does not always focus on the serious and complex underlying challenges of trauma. This calls us to note that there is a parallel issue at play with prescriptive talk therapy and some research approaches: they both can overvalue the quickness of productivity rather than the necessary time and space for compassionate inquiry, nuance and complexity, and interpersonal reflection.

Beyond the question of the healing aspects of the two different encounters, we also want to point out that the training (both methodological and ethical) that researchers and clinicians each receive is quite different. These differences in training are especially notable when planning for and triaging unexpected events like retraumatization. Clinicians and therapists typically receive years of formal and informal training, supervision, ongoing case and practice consultation, and continuing education related to their profession's practice standards. Unlike most qualitative researchers, they are prepared for and have the tools to respond to these emergent situations.

This leads us to two particularly challenging questions: (1) how much training should research practitioners get to prepare them for triaging a crisis, and (2) what steps should they take to mitigate matters of concern if they do not have such training? It's important to note that we are not advocating for researchers to become clinicians, although some do pursue this route and have more in-depth training and competencies in these areas. However, we should be taking steps to both anticipate and minimize the potential for harm to both participants and practitioners. If we are unable to involve clinicians in our processes (something we will strongly advocate for below), then it is incumbent upon us to take the steps necessary to be able to identify situations that can evoke trauma in ourselves and those we are interacting with and develop the responsible and necessary skills[8] to triage situations where that trauma begins to surface. This, in turn, leads us to the topic of becoming trauma informed and responsive.

SIX PRINCIPLES FOR A TRAUMA INFORMED & RESPONSIVE APPROACH

Trauma informed and responsive approaches begin from the understanding that people may have some history of trauma and take that into account in all engagements. These methodologies began to be developed by physicians, psychotherapists, and social workers (among others) to assist with treating returning veterans of the Korean and Vietnamese Wars. The addition of Post Traumatic Stress Disorder to the *Diagnostic and Statistical Manual III (DSM-III)* in 1980 greatly increased the amount of research conducted on trauma and the application of the concept beyond the space of military conflict. By the end of the first decade of the twenty-first century, medical and mental healthcare institutions were beginning to adopt integrated trauma informed approaches to assist in the delivery of healthcare (Center for Substance Abuse Treatment (US) 2014).

In 2014 the United States Substance Abuse and Mental Health Service Administration (SAMHSA) published its landmark treatise *SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach*. Among other things, the document laid out six principles to guide trauma informed engagements: (1) Safety, (2) Trustworthiness & Transparency, (3) Peer Support, (4) Collaboration & Mutuality, (5) Empowerment & Choice, and (6) Attention to Cultural, Historical & Gender Issues (SAMHSA's Trauma and Justice Strategic Initiative 2014). SAMHSA's framework[9] is intended to shift and share power while addressing the trauma that everyone involved in the process may be carrying. While originally intended to guide therapeutic encounters in emergency and first responder contexts, all of these can and should be applied to the ethnographic and qualitative research process.

As we consider each of the principles, we ask you to keep three things in mind. First, while we are addressing them one by one, the principles are all inherently interrelated and build upon each other. Secondly, they are not intended to be applied in a unidirectional way. The principles are not things you do *at* a participant. Instead, we integrate and apply them to everyone involved in the planning, conducting, analyzing, and sharing of research or design. In other words, at a minimum, we need to consider how each principal impacts both the people and the environment the research focuses on *and* the people who are conducting the research and the processes they are creating. Ultimately, we should extend this framework to everyone we interact with—our colleagues and clients (internal and external), and perhaps most importantly, to our friends and family.[10]

Finally, we want to acknowledge that every one of the principles could be the subjects of their own individual papers (or books). In fact, many have been. Our treatment of each one will necessarily have to be cursory. Our goal is to sow seeds about how each principle can influence the research process and to highlight additional resources to explore as you consider how to apply these principles to your personal, team, and organizational practices.

1. Safety

The first priority must be that everyone involved in the research encounter (participants, observers, and researchers alike) feel emotionally, psychologically, and physiologically safer[11] when participating in the process. This focus on safety begins before the planning stages of research and continues through every stage of the process. One way to start this is to engage in a "safety audit" by asking, "how might participating in this research cause or fuel more harm to a participant?" and "What steps can be taken to mitigate or minimize that harm?" Hirsh points out that this is especially important as more and more research focuses on exploring sensitive subjects, often engaging with vulnerable communities. Whenever possible, this type of audit should be done collaboratively. It's a place where clinicians or social workers can and are starting to be brought into the process. Or, even more optimally, it's an opportunity to have members of the community you are working with actively engage and participate in the planning as experts and advocates for their communities.

For those familiar with Ethics Committees or Institutional Review Boards (IRBs) these questions may feel very familiar. However, a trauma-informed concept of safety is far more inclusive than the foundational minimum requirement that is often expected with IRBs. Embracing the multidimensional perspective of being trauma informed and responsive means also asking, "How might performing this research harm a researcher?" For example, consider the additional emotional burden that is often placed on BIPOC researchers who are asked to conduct research within BIPOC communities, especially around sensitive subjects, because of assumptions around intersubjectivity (Sunderland and Denny 2016, 224). Continually asking a BIPOC team member to research and/or speak and stand in for BIPOC communities risks activating vicarious, community, and intergenerational trauma (Menakem 2017).

In cases where there are safety concerns and the possibility of retraumatization, we must learn to ask the difficult question "Is this research necessary?" and "Has this research already been done?" As believers in ethnographic methods, we put a premium on getting into the field and learning from those with lived and living experiences. However, we should also recognize the immediate and long-term stress that this can place on the individuals and communities we work in. As the organization Chicago Beyond states in their excellent publication *Why Am I Always Being Researched*?:

> In the hometown of urban research, Jonte asks aloud "why am I always being researched?" His peers are in three studies at once. A grandmother on his block, neighbors, and staff at nonprofits serving him, remember being in studies, too. Jonte is one of thousands in Chicago who, over decades, have participated in research studies with price tags in the millions, all in the name of societal change. And yet, the fruits of those studies have infrequently nourished the neighborhoods where their seeds were planted (Chicago Beyond 2019, 10).

There are often less invasive methods to gather information[12], especially in cases where significant research has already been done on a subject. Empowering individuals and teams to choose not to do research or to change how the research is conducted to address safety issues is also deeply tied to the fifth principle: empowerment, voice, & choice.

If a decision is made to continue the research while acknowledging safety concerns, then mitigation plans that were thought through and considered ahead of time need to be activated. For example, at the non-profit Code for America, we train our researchers to identify the signs of traumatization and give them and their participants the ability to stop the interview at any time for any reason (Rappin et al. 2020). We also create lists of helpful aid resources and organizations that can be shared with participants to assist them with the challenges they are facing. Code for America also requires two researchers to be present in most engagements to support each other and participants through the research process; see the postscript in this paper for a demonstration of why this is so important.

Researchers should also consider how the other person's environment should shape the research format.[13] For example, for some people, a call is safer than a Zoom because it doesn't require showing someone's home or the use of a data plan. Additionally, there should also be procedures in place to help people who are experiencing acute stress or retraumatization during an interview (including stopping the interview to check in and co-determine next steps [e.g., continue the research process or not], and if necessary, calling social care resources or a mental health hotline for the individual in distress).

The work of creating psychological, emotional, and physiological safety continues throughout the research process. While a significant amount of focus is placed on interactions with our participants, it is not the only place where traumatization and retraumatization can occur. As noted earlier, retraumatization is often activated by revisiting past events without adequate support. Since analysis and synthesis of data necessarily require us to return to and relive interview sessions, it is another stage primed for the reactivation of trauma and support structures should be put in place for researchers, especially in cases where they know that they will be returning to sensitive and potentially activating or triggering conversations.

Across the research process, we can also consider utilizing tools and approaches from clinical practices where risk assessments and safety planning are not just everyday practices but an expectation for ensuring minimal risk to harm. We mention this as potential inspiration with the caveat that we also honor and more thoughtfully integrate the knowledge and expertise that has come from the very individuals who have learned, unlearned, and adapted these tools in and outside a clinical practice in innovative ways. In this respect, we discourage simply borrowing from other disciplines but rather, keeping with principle five, encourage their inclusion and deeper integration for enhanced co-learning and collaboration. For example, in academic or academic adjacent settings, consider reaching out to your school's masters-level social work program to better understand how risk assessments and safety planning are currently being adapted in community-based work. Following the SAMHSA trauma informed framework (in particular, principle four, collaboration and mutuality), it is best to work directly with clinicians and other social work and social care professionals to plan and conduct research in ways that are safer for all.

2. Trustworthiness & Transparency

Drawing inspiration from activist Mervyn Marcano, we must learn to operate *"at the speed of trust"* (brown 2017, 42). This means working to be as open as possible about our research with our participants. At a minimum, we need to disclose why the research is being done, who it's being done for, how the data will be collected and stored, and how the findings will ultimately be used. It also means that communications with participants should be delivered in culturally respectful and representative ways with a commitment to a focus on clarity and accessibility.

Additionally, we need to be transparent about what will be covered in a research session and what it may feel like to participate. This is especially important in research that will cover sensitive and complex topics. If there are concerns that questions might create stress or could potentially be especially activating and lead to retraumatization, then that needs to be clearly discussed with participants ahead of the research as part of the fluidity of an ongoing informed consent process. We also must be clear about the ways the participant can steer and control their participation in the research. This will be discussed in more depth with principle five, empowerment, voice, & choice. For the moment, it is enough to say that consent is not truly possible without transparency.

Being transparent and building trust takes time. In the best-case scenario, this means working at the pace your participants desire to work at rather than necessarily a rushed or urgency-ridden project timeline. Often, business, and other needs, make taking that time difficult. When it is not possible to negotiate more time, then it's important to find ways to be transparent about your constraints with both your stakeholders (in clearly expressing the limits of what can be researched under those conditions) and with your participants (about why the research is happening on the schedule it is).

Finally, trustworthiness and transparency extend beyond the interview. Whenever possible, it includes sharing the results of a research project or a summary of findings with participants. Part of that process includes indicating what you will be and are not able to share as part of preparation with a participant while also being mindful of how to continuously protect all participants' confidentiality with high-level findings.

3. Peer Support

Throughout the process, it's critical to think about how participants and researchers can support each other. While this may be challenging, especially in research situations where participants don't have the opportunity to meet one-on-one, there are still opportunities for support. For example, one can work with a network of community partners to help identify ways to support research participants with their challenges. In more participatory methods, such as participatory design or co-design projects, there are also opportunities to build participant support and review sessions in the various stages of the process. Additionally, one should not discount how sharing research results—through conversations, print publications, presentations, etc.—can help foster a sense of peer support for participants in so much as it provides them with a chance to see how their experiences are often shared by others. In many ways, this practice finds synergy with the principle of empowerment.

Peer support can also mean creating spaces within research organizations for researchers to support each other after difficult interviews. For example, at Code for America, the team has a framework for providing more immediate support if a team member has had a particularly challenging research experience. Another example of this in practice is a project where Civilla, a Detroit-based design non-profit, partnered with Social Workers Who Design so that team researchers could schedule debriefing and processing sessions with a clinically trained social worker-designer on an as-needed basis. The primary goal was to provide a dedicated, recurring, private space for the researchers to discuss specific design-based and structural challenges while working on a long-term project with varying levels of intensity in the child welfare system.

4. Collaboration & Mutuality

Part of the process of creating safer and more supportive environments is exploring ways to involve participants more broadly in the research process. As noted above, this can include sharing research findings with them and their communities at different phases. Using participatory design or community-based participatory action research could also involve working with community groups, advocates, social workers, or other trauma experts from the beginning of framing research to ensure that questions are beneficial for the communities that you are working in and to identify any anticipatory issues or activations that could arise over the course of research. Community members can also help identify what questions to ask and culturally appropriate ways to collect the data. The more the approach can build power and have participants show up and speak as the experts rather than having their voices mediated by a researcher, the more collaborative the process and authentic the results can become.[14]

In conjunction with the previous principle (peer support), this can also mean thinking about the concept of "compensation" as more than just financial incentives for participating in research. This is especially important in contexts when we are researching products and services that our participants use. For example, we should ask ourselves what "pain points" are significant enough for us, after a session is completed, to assist a participant in finding a solution. In some cases, that is as easy as providing a warm handoff to customer support. A more involved example of this is how Airbnb researchers provided in-session support to COVID-19 first responders attempting to find temporary housing on their website (Hitchcock and Johnson 2021). The decision to do this also ended up improving the research: "[t]rying to solve responders' issues while on the phone with them helped the researchers understand the urgency of the task at hand and empathize at a deeper level with how taxing the booking process was." (ibid., 26)

5. Empowerment, Voice & Choice

Beyond fostering a safer and more supportive environment, one of the most important parts of treating trauma is ensuring that clients and patients are in control of their treatment. The same is true for everyone involved in a research project. Being trauma informed does not mean wrapping participants in "bubble wrap" and making decisions for them about what will or will not be traumatic. Instead, the goal is to provide them with all the information they need to make those decisions for themselves. This notion of choice and agency is interconnected with the concept of consent. This often leads to a hyper-focus on consent forms and, in some cases, a mistaken notion that consent is the same as a non-disclosure agreement or simply a "check off" within the research process versus *understanding consent to be something that is informed, occurs prior to research, and, once given, must be sustained and is able to be revoked.*

As mentioned above, the principles are interrelated and built upon one another. Consent cannot be provided unless all communications are transparent and fully understood (principle one). Likewise, consent can only be maintained through fostering and nurturing trust (principle two). Given the inherent power dynamics of research engagements, especially whenever there is any form of compensation for participation, it's important for the research to find opportunities to shift the power dynamic towards the participant. Further, compensation need not just be a gift card for one hour of interview time. There are important hospitality practices happening in the field that are actively expanding how we also think about compensation: paying participants immediately via electronic apps, providing transportation and refreshments, and having on-site childcare. Each of these practices and more help us redefine our notion of what it means to support participants and foster consent.[15]

Alba Villamil and others also argue that an important part of shifting that power is helping participants recognize their ability to withhold or retract consent (Villamil 2020; Lee and Toliver 2017). At a minimum, this means clearly communicated consent procedures that help participants understand all aspects of the research and that enable participants to stop the interview at any time and still receive compensation. This also includes allowing interviewees to control the flow of the interview and control how much they choose to discuss a topic. Researchers should also consider taking steps to ensure participants feel empowered to take those actions. For example, Code for America always compensates participants at the start of a research engagement so they can feel more comfortable choosing to leave an interview for any reason (Rappin et al. 2020). Additional steps could also include re-engaging with interviewees and sharing how their data will be used in the final outputs to ensure they are comfortable with how they are being represented. Approached from this perspective, "consent" ceases to be a gate to pass through (or, more to the point, a form to sign) and becomes something far more open and fluid: an unfolding relationship.

Finally, we want to emphasize that, as with the rest of these principles, "empowerment and choice" must be extended to researchers. Beyond fostering mechanisms for researchers to practice self-care[16], organizations must have procedures and protections in place for researchers to ensure that projects proceed at a pace that keeps them safe. And in cases where a researcher could potentially be harmed by participating—as already discussed in the example of BIPOC researchers who often must do additional emotional labor when working within communities they identify with or are asked to identify with—there should be the option to choose *not* to do the work.

6. Cultural, Historical & Gender Issues

Growing out of that last point, we need to continuously recognize that our work is always already situated within specific socio-historical contexts. It's incumbent upon us, as researchers, to integrate that awareness into how we prepare for, conduct, and share research. As noted above under "safety," that includes asking if conducting the research could harm a community or the researcher themselves. This may also lead one to ask if they are the right researcher for a specific engagement. This is connected to many of the discussions around decolonizing research and acknowledging the historic harms done by "expert researchers" on indigenous and other vulnerable communities throughout the years. (L. T. Smith 2012; Weaver 2019; Visser 2015) Likewise, due to the broader role that systemic oppression and racism have played in the creation of intergenerational trauma within BIPOC and other minority communities, this principle also asks us to proactively think about how our work can fit into various liberatory and anti-racist frameworks (Powell et al. 2022; Menakem 2017).

Designer and urbanist Liz Ogbu's work on the "pre-conditions of healing" (Ogbu 2020) does a great job of centering the importance of understanding and acknowledging the complex histories of cultural objects and structures.[17] In it, she writes:

> [H]ealing won't come about just through building more housing, establishing new bus routes, or even repurposing funds from a police budget into a new community center. It requires more; it requires holding space for the complexity that created and has sustained these wounds as well as doing the work to close the wounds in such a way that they can never reopen. In other words, continuing to drive cultural change forward also requires embracing the preconditions to healing. Before we can heal, we have to acknowledge the wounds: their existence, their depth, and their pain (Ogbu 2020).

While this might seem less applicable for those engaging in business-to-business or business-to-consumer research, it is still important to consider how the products and services we work, and have worked, on may have been involved in creating situations, directly or indirectly, that cause stress or harm for the people who used them.

BECOMING TRAUMA INFORMED AND BEYOND

With the principles introduced, we now turn our attention towards applying them to research and design processes. We believe that many reading this likely already engage in practices that can fit into one or more of the six principles. The advantage of adopting the SAMHSA framework, or a similar one, is that it provides a more approachable rubric for organizing and formalizing what is already being done, identifying gaps, and exploring opportunities to fill them. Doing this can be as simple as creating a matrixed document that contains a row for each of the principles and columns that list the corresponding actions taken to deliver on each principle. For a simple example of what this could look like, see the chart in "Triggers or Prompts? When Methods Resurface Unsafe Memories and the Value of Trauma-Informed Photovoice Research Practices" (Pichon, Teti, and Brown 2022). In the article, the authors include what steps were taken during their research and then have an additional reflective column for steps that could be taken in the future when conducting a similar project. Alternatively, columns could be used to capture what will be done in each major step of the research process or could correspond to different participant categories in the research or design process (e.g., "interviewees," "researchers," "stakeholders," etc.). Regardless of what you choose, experimenting with this type of audit is an excellent way to take some initial steps toward adopting a trauma informed approach to your work.

As you think about those initial steps, keep in mind that being "trauma informed and responsive" is not an "either/or" binary state. There are always opportunities to improve one's practice and things you'll wish you had done differently. And, as demonstrated in the post-script, there will also be setbacks along the way. We have found it far more productive to think about becoming trauma informed as a continual practice rather than something you achieve. It is not something that can be developed overnight, let alone over the course of a single project. Instead, it is something that must be intentionally cultivated and mindfully grown over time for the good of all involved.

One challenge that many have faced on this journey is a desire to jump right to the "running" stage without doing the work of learning to crawl and walk. While the journey to developing a personal practice is always somewhat idiosyncratic, we feel that inspiration can be drawn from development models created by healthcare professionals that help demarcate major steps along the way. To this end, we have adapted a 4-phase developmental model created by the Missouri Department of Mental Health[18] (Jones 2014) to help frame this discussion:

1. ***Trauma Aware.*** The journey begins by understanding more about the presence of trauma in our society, how it's created, and how it can and continues to manifest. This includes considering how it will emerge within the context of any research engagement (regardless of subject matter).
2. ***Trauma Sensitive.*** The next phase is to begin to explore and understand the core principles of trauma informed approaches and how they can apply to your work. One also seeks to identify and "sense" the various ways that trauma can present itself in both researchers and research participants and starts to plan for how to minimize those opportunities. Researchers also begin to explore implementing trauma informed approaches with others within their organizations and/or with clients.
3. ***Trauma Informed.*** With the support of their organizations, the researchers begin to rework their research approach to integrate concepts from the core principles. This might include implementing proactive self- and group-care practices and peer and

external support structures for researchers. Research work begins to be evaluated in part on how trauma informed it is.

4. ***Trauma Responsive.*** Being trauma informed is now the norm for both researchers and the organizations they operate within. Community organizations and collaborators are involved early in planning processes and reviewing research approaches. Researchers have developed relationships with and naturally seek out the assistance of experts from mental health and social work fields to collaborate on project scope, design, and implementation. Research embraces more participatory and liberatory approaches, including liberatory and anti-oppressive practices from mental health and social work fields. In addition to standing measures like the development of useful findings and insights, the mental and emotional health of participants *and* researchers are prioritized as key indicators of successful research and design efforts.

Becoming trauma responsive is an ongoing and unfinished process. The act of changing our personal mindset and approaches to research and design should come to create, and be reflected by, changes at the team and organization levels. In fact, as this model progresses, the responsibility for creating and sustaining trauma responsive practices shifts from individual researchers and designers to the organization itself. Individual practice is always shaped and constrained or supported by organizations we work within and for. In many respects, being trauma informed can run in direct opposition to the ways that many organizations currently are used to conducting research. The emphasis on moving more thoughtfully and with care, sharing power, and emphasizing not only providing informed consent but actively affirming all parties' ability to opt in and opt out of that informed consent can be controversial. This could be seen as disruptive to the "optimal" ways of doing applied research that has evolved over decades of practice. It is, therefore, critical to take the time to educate and self-study these approaches within an organization to get buy-in.[19] As we consider this progression of moving from aware to sensitive to informed to responsive, there is still much work to be done on charting approaches that help organizations move from one to the other.

To that point, it is important to call out that getting organizational buy-in can, at times, be extremely difficult. Researchers who are not also clinically trained and/or licensed to practice should not be required to screen or assess for trauma. To expect this would be reckless and irresponsible and the epitome of practicing without a license. However, attempting to enact wide-scale trauma informed change without a commitment to a multi-modal and interdisciplinary approach is often unrealistic and unsustainable. Without ongoing organizational perseverance, the responsibility for sustaining trauma informed practices tends to fall back to individual researchers and designers, who often lack the institutional or positional power to significantly shift policy. This lack of institutional support can then create conditions that lead to organizational moral pain, which increases the potential traumatization and retraumatization in the very practitioners seeking to make the system more trauma informed. As with the topic of organizational transformation, it will also be important to explore the topic of institutional betrayal and betrayal trauma theory[20] in the context of design and research spaces. We hope some of you reading this will pick up some of that work.

These challenges point returns us to why it is so important to shift our thinking about trauma informed and responsiveness from a state of "being" to "becoming." Ultimately what we are talking about is not just fostering a change in practice or perspective but in ourselves, our teams, and our organizational structures. That is a process that will take time—years, if not decades—and will not be without setbacks. However, it is the right thing to do and, for reasons we are about to discuss, we are presently in a moment that makes this work especially relevant.

THE IMPERATIVE FOR EMBRACING TRAUMA INFORMED & RESPONSIVE APPROACHES

So far in this paper, we have explored how trauma is created and surfaces, how research encounters create conditions prime for retraumatization, one trauma informed framework, and one approach to implementing it, over time, at the personal and organizational levels. Now we turn to the questions of why now—this specific historical moment we are writing this in—is the time to begin this journey and what embracing it can mean for the field of research.

The second question is the easier one to address. As has been discussed throughout this paper, trauma (both big T and little t) is an ongoing presence in our lives. Even if you do not personally carry trauma, there is a chance that you have in the past, or will in the future, interact with people who do. And, due to the nature of our work, the chances of those encounters are increased. Recognizing this as being the case, there is a moral and ethical imperative to prepare for that possibility, if not eventuality.

There is also an epistemological reason as well. We believe that adopting a trauma informed and responsive approach will ultimately produce better research outcomes, not only in terms of healthier interactions among all participants in the process but also in terms of the quality of findings, the stories that will be shared, and the changes that can occur. Actively working to integrate SAMHSA's trauma informed framework into one's research process means embracing many of the participatory techniques and approaches that feminist, queer, and indigenous researchers have been advocating for decades. The resulting research environments are safer for all participants, creating the conditions for more engaged sharing of life experiences, perspectives, and ultimately, deeper insights. Likewise, finding ways to involve participants in the earlier and later stages of the research process opens additional opportunities to ensure that what we are researching will be of actual value to those we research.

Becoming trauma informed also has implications beyond the practice of research. It also transforms the way that organizations function. Ultimately embracing trauma informed methods is something that needs to be done by individuals *and* organizations. From an organizational perspective, that means creating frameworks to productively address not only the trauma and stresses faced by their clients but also the ones faced by employees[21], contractors, volunteers, and others they interact with. It's a hopeful vision and a much needed one.

This brings us back to the first question: "why now?" Beyond platitudes about how now is always the "best time" to start something, there are specific things about this shared moment that indicates there is a real opportunity to enact change. The late Marshall Sahlins argues that at certain historical moments, "the structure of the conjuncture" (how specific events and cultural trends meet and combine) creates opportunities for transformational individual and group agency (Sahlins 2013, 10-1, 155-7). As we discussed at the beginning of the essay, we are in a historical moment where we are still experiencing and processing the impact of a web of shared collective traumatic events. At the same time, various community and advocacy groups have been advocating for confronting past historical evils like structural racism and oppression. Many traditionally marginalized groups are also calling for recognition, greater acceptance, and ultimately a “seat at the table” in all discussions that involve them. There is also a resurgence in the organized labor movement, and with it comes a focus on sharing power.

As a result of the conjuncture of these various forces, the topics of trauma and healing have been circulating in ways that we have not seen in recent times. The popular press regularly contains articles that consider how we will heal from the collective traumas of COVID-19 and other recent events. In response to this, business and organizational management publications, like the Harvard Business Review (Manning 2022), are publishing content on how to begin to make workplaces more trauma informed. In fact, while writing this article, it was difficult for us to keep up with the amount of new content being published on trauma informed and responsive research and design methods (a rapidly growing body of work that we are adding to with this paper). All of this points to us being in one of those historical moments where change is possible, and we have an opportunity to, as a field, shift our collective practice in the direction of being more trauma informed and responsive.

AN END (AND WE HOPE THE BEGINNING OF A JOURNEY WE TAKE TOGETHER)

In this moment of potential, we want to remind you that working to integrate trauma responsive practices in design and research remains a bold endeavor. It requires all of us to willingly step into spaces that are often uncomfortable. After all, change is uncomfortable and often creates resistance (both in ourselves and in others). This work will take effort and should not be rushed. The journey is lifelong.

As you reflect on this paper and the next steps you will take, keep in mind that when it comes to practicing trauma informed and responsive approaches, it is, as anthropologist Clifford Geertz once famously wrote, “turtles all the way down.” (Geertz 2017, 29) Use trauma informed care principles to guide trauma informed approaches to become trauma responsive. That means giving ourselves grace while taking small steps. It means being vulnerable, asking for assistance, experimenting, and sharing what works and does not work. It means knowing that we will all still make mistakes along the way, possibly even causing unintentional harm to ourselves or others. It means finding the courage and compassion, when harm happens, to acknowledge it and move towards healing and repair. It means meaningful shifts toward collaboration, mutuality, and peer support to stay committed to “being with” versus “doing at.” Our greatest hope is that we continue to encourage, uplift, and support one another in this vital work.

POSTSCRIPT: ENCOUNTERING TRAUMA IN THE FIELD AND IN ONESELF

The following is a recollection from co-author Matthew Bernius:

In the spring of 2021, I was interviewing folks living with convictions who were held back because jobs and housing require criminal background checks. My organization, Code for America, helps to design and implement policies that automatically clear eligible criminal records without requiring people to navigate complex, time-consuming, and expensive legal processes. As part of that work, we collect stories about the impact records have and the difficulties people face trying to get their records cleared. Normally, I handle participant screening and recruiting myself. However, for that round of research, a partner organization recommended participants and helped book the interviews.

From the start of one of those interviews, I knew something was wrong. Because it takes years to clear a record, the people we interview are typically long past their incarceration. But George (a pseudonym) had been released only a few months before we talked. I should have stopped the interview there, but this was a fast turnaround project, and we didn't have a lot of participants. I convinced myself that letting George share his story would still be helpful to the overall effort of bringing automatic record clearing to his state.

George walked me through all the challenges that he had faced over the last year. Immediately following his release, he came down with COVID, became very sick, and had no one to care for him. And even when he was finally feeling physically better, his delivery business couldn't get insurance because of his criminal record. He couldn't get work and couldn't make loan payments on his van.

As George described each incident, he became more agitated. And so did I. Hearing each new struggle and frustration he faced, my heart sank more and more. All I could think about was how the laws in George's state required him to wait for years before he could apply to clear his record. I thought about how difficult his life would be in the foreseeable future.

Then George said that his understanding was that I could help him get his record cleared in return for the interview. At that moment, I had a full-blown panic attack. I had difficulty regulating my breathing. I felt helpless and angry at myself. I had chosen to continue the interview for my convenience, only to discover that what George expected to receive in return for sharing these (potentially retraumatizing) experiences was something I couldn't provide. I felt that I unintentionally violated my professional sense of ethics. Beyond that, I felt ashamed that after having spent months working to incorporate trauma informed approaches to my research, I still managed to create a situation that had led to this.

Thankfully, the Code for America research team recognizes the potential for something like this to happen, and I had a partner with me for this interview. I asked them to take the lead while I worked to regain my composure. My partner took over and kindly explained to George that while we couldn't help him directly, we would connect him with legal aid organizations that would work with him to see what was possible.

Reflecting on the experience, I took away two key lessons. First, it serves as a reminder about how easy it can be, even with safeguards theoretically in place, to unintentionally create a research situation that can trigger trauma in one or more participants. More importantly, this incident helped internalize the difference that Sarah Fathallah identifies between being trauma informed and trauma responsive (and how I had mistaken one for the other):

> [A] trauma-informed perspective is exactly that: a lens that helps us understand. While trauma can inform our perspective, we need to be trauma-responsive in our practice. We understand the difference between trauma informedness and trauma responsiveness as the difference between principles and practices. As Rachael Dietkus puts it, whereas trauma-informed researchers would acknowledge the existence of trauma, trauma-responsive researchers "actively anticipate the potential existence of trauma" and address it throughout the research process (Fathallah 2022).

Matthew Bernius uses qualitative social sciences and design theory and methods to collaboratively create more equitable government systems and experiences. His work at Code for America focuses on improving access to and delivery of social safety net services.

Rachael Dietkus is a social worker-designer committed to care focused and trauma responsive practices in design and research. She is the founder and chief compassion officer for Social Workers Who Design, where she gets to work with design educators, researchers, and leaders worldwide.

NOTES

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1. As mentioned above, these theoretical lenses for considering trauma are often used in tandem. For example, Ong's account bridges back into an analysis of how the possessions are pathologized and seen, by factory owners, as a biomedical issue to be dealt with via pharmaceutical interventions versus using traditional local solutions.

2. Beyond the collection of blog essays that were published on the anthro{dendum} website in 2019 (https://anthrodendum.org/author/trauma-and-resilience), some of which are cited in this paper, there are some notable examples of social science works that grapple with the impact of trauma on researchers. Perhaps the best example is the late Billie Jean Isabell's book *Finding Cholita*, a "factional" exploration of the long-term effects of trauma on indigenous people in Peru and the ethnographer who is working with them.

3. Academic institutions and programs are often traumatizing to students, faculty, and staff. A 2018 study found that graduate students were "more than six times as likely to experience depression and anxiety as compared to the general population" (Flaherty 2018). Years after graduating, many continue to work through traumas created and exacerbated during and by education and the structures of harm that are complicit.

4. Staying true to our discussion of theoretical framings earlier, it is important for us to note that there are many different models and understandings of what we are calling "trauma." We have chosen to use this model as it is the dominant one in the cultural contexts that most of us live and practice within. Others draw on indigenous and non-western bioscience modes of knowledge to explore trauma.

5. While we typically think about empathy as an emotional connection, it is critical to note that it has physiological implications as well. Neurobiological studies have shown that the feelings created in us through empathic reactions also impact our bodies via the release of chemicals to help mirror the experience we are hearing about. If our participant is sharing good news, we experience a sympathetic chemical reaction of joy for them. Likewise, when they are sharing a stressful experience, we experience, via the release of stress hormones, a sympathetic reaction of suffering. Literally being exposed to another's pain and suffering can create sympathetic and embodied physical pain and suffering in us as well (Russell and Brickell 2015).

6. Note that many of those feminist, indigenous, BIPOC, and queer scholars and practitioners emphasize that the rapport, congruence, and empathy researchers work to develop needs to be reciprocal and bi-directional. This focus of developing a relationship "with" the participants versus "at" them is foundational to trauma informed and responsive approaches.

7. The collapse of research encounters into therapeutic sessions is in part due to the parallel frames invoked by similar speech acts in both types of encounters. For a masterful unpacking of the

underlying social and metapragmatic processes at play, and the related slippages, see the work of the late linguistic and semiotic anthropologist Michael Silverstein, in particular *Talking Politics: The Substance of Style from Abe to "W."* (Silverstein 2003)

8. One proactive step that we as researchers can take to protect ourselves and our participants is to train in psychological first aid techniques. Much like other forms of first aid training, the goal of psychological first aid is to help someone triage and stabilize a situation long enough to get the individual experiencing acute trauma to an expert who can take over their care. For more on psychological first aid, see the World Health Organization's guide (Snider, Van Ommeren, and Schafer 2011). The Institute for Behavioral Science at the University of Colorado Boulder CONVERGE center also has useful training materials around the topic (https://converge.colorado.edu/resources/training-modules).

9. Since its introduction, the SAMHSA framework has inspired a variety of alternative frameworks. For example, in 2020, the Massachusetts Childhood Trauma Task Force adapted the SAMHSA model, refocusing some of the original categories and de-emphasizing others while adding new ones (Massachusetts Childhood Trauma Task Force 2020). Given SAMHSA's foundational role in the development of many trauma informed and responsive frameworks we are choosing to use it as the reference for this paper.

Additionally, there are other trauma informed and responsive frameworks whose genealogy is not directly from SAMHSA. For a recently published example see Taylor Paige Winfield's "Vulnerable Research: Competencies for Trauma and Justice-Informed Ethnography" (Winfield 2021).

10. It is often difficult to leave our work at work—especially when things are challenging. As such it is not uncommon for partners or family members to accidentally be exposed to secondary traumatic stress through what we share. If we are unable to be good stewards of our own trauma through self-care (Lipsky and Burk 2009), then we also risk creating conditions at home (and in the workplace) that can potentially traumatize others.

11. We use the term "safer" rather than "safe" throughout the paper, because the latter implies a binary state in which a situation is either safe or unsafe. In practice, there is no way to guarantee actual safety. Assuming that a situation is safe can, in fact, lead to complacency and overlooking potential risks to participants.

12. For one example of choosing less invasive research methods, see taranamol kaur's account of how, at the start of the COVID-19 pandemic, the Code for America research team avoided creating more stress for people applying for food benefits in California by analyzing customer support messages versus directly interviewing people about the impact of the pandemic (kaur 2020).

13. For other examples of how teams used trauma informed and responsive frameworks to help ensure participant safety see EPIC case studies "Designing for Dynamics of Agency in NYC Homeless Shelters" (Radywyl 2019) and "Anticipating Needs: How Adopting Trauma-Informed Methodologies During COVID-19 Influenced Our Work Connecting Frontline Workers to Temporary Housing" (Hitchcock and Johnson 2021) along with the work of the Philadelphia Service Design Studio (PHL Participatory Design Lab 2019) and Sarah Fathallah's work at the Think of Us organization (Sarah Fathallah 2022).

14. For more on research approaches that build power through participatory methods while conducting themselves in trauma informed and responsive ways see the work of K.A. McKercher (McKercher 2020), Sarah Fathallah (Fathallah 2022), the Public Policy Lab (Radywyl 2019), the Philadelphia Service Design Studio (PHL Participatory Design Lab 2019), and Turning Basin Lab's collaboration with the JFF on worker led research (Bediako et al. 2021). For those interested in the application of these principles to the design process, in addition to Philadelphia Service Design Studio and the Public Policy Lab, we also recommend looking at the work of Shopworks Architecture (https://shopworksarc.com/tid).

15. Public Policy Lab uses the following seven questions to begin to think through questions of informed consent:

1. Are you offering participants fair compensation for their time?
2. Are you conducting the consent process in plain language?
3. Are you maximizing participants' control over their data?
4. Have you made it clear that the research is not confidential?
5. Are you collecting as little personally identifiable information as possible?
6. Have you been explicit about potential harms?
7. Are you prepared to provide resources if people are having problems? (Public Policy Lab 2021)

16. For an in-depth discussion of self-care in the face of dealing with trauma, see the seminal work *Trauma Stewardship: An Everyday Guide to Caring for Self While Caring for Others* (Lipsky and Burke 2009).

17. There are several liberatory design toolkits that include frameworks for exploring historical, cultural, and gender issues. For example, see Creative Reaction Labs' *Equity-Centered Community Design Field Guide* (Creative Reaction Lab 2018) and Maya Goodwill's *A Social Designer's Field Guide to Power Literacy* (Goodwill 2020).

18. While we use the same step names as the Missouri Model, we have assigned them to different positions along the journey. Following Karen Treisman, a clinical psychologist based in London, we choose to put Trauma Responsive as the final step as it implies a more active response to the potential presence of trauma and points towards healing as a potential goal of the research process.

Additionally, as with trauma informed and responsive frameworks, there are several organizational development models to draw inspiration from. For alternatives, see the *Oregon Model* (Trauma Informed Oregon 2021) and the work of Alisha Moreland-Capuia (Moreland-Capuia 2019) and Karen Treisman (Treisman 2021).

19. For an example of how a team successfully advocated for taking a trauma informed research approach, see the 2021 EPIC case study "Anticipating Needs: How Adopting Trauma-Informed Methodologies During COVID-19 Influenced Our Work Connecting Frontline Workers to Temporary Housing" by Meredith Hitchcock and Sadhika Johnson (Hitchcock and Johnson 2021).

20. The term "institutional betrayal" refers to wrongdoings perpetrated by an institution upon individuals dependent on that institution, including failure to prevent or respond supportively to wrongdoings by individuals (e.g., sexual assault) committed within the context of the institution. Institutional betrayal as connected with betrayal trauma theory was introduced in presentations by Jennifer Freyd in early 2008 (Freyd 2022) and is discussed in more detail in various publications (Platt, Barton, and Freyd 2009, 201-; C. P. Smith and Freyd 2014).

21. It is important to note that some of that stress and trauma is often created by the organization itself. Sometimes, ironically, stress and trauma is created in the name of addressing employee trauma. For more on this, see the dscout & HMNTYCNTRD report *Challenging Company Playbooks to Workplace Trauma* (Villamil, Eisenhauer, and Castillo 2021) and the discussion of institutional betrayal in the Harvard Business Review article "We Need Trauma-Informed Workplaces" (Manning 2022). For resources on dealing with the impact of institutional betrayal, see co-author Rachael Dietkus' contribution to the *Surviving IDEO* blog series: "Trauma and Design" (Dietkus 2021).

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Mapping the Messy

Using Visual Noise to Convey Not All Journeys Are Linear

LISA KOEMAN, *Elsevier*

In order to communicate research findings, industry researchers rely on a wide range of tools to convey insights. A prime example are visualisations depicting steps in a journey in a sequential order. The use of such a visual representation is often meant to summarise commonalities in a simplified way; they act as a standalone shareable shorthand designed to narrate 'the experience(s)'.

This PechaKucha instead makes a case for messiness: visual noise aimed to overwhelm. My research on rejection in academic publishing shows that the reality of publishing papers in journals is anything but linear. In order to communicate this message to stakeholders, I set out to paint a vivid picture of endless loops and hoops authors go through to achieve success. This talk is a call for conveying the messy, and an ode to the resilience of academic researchers.

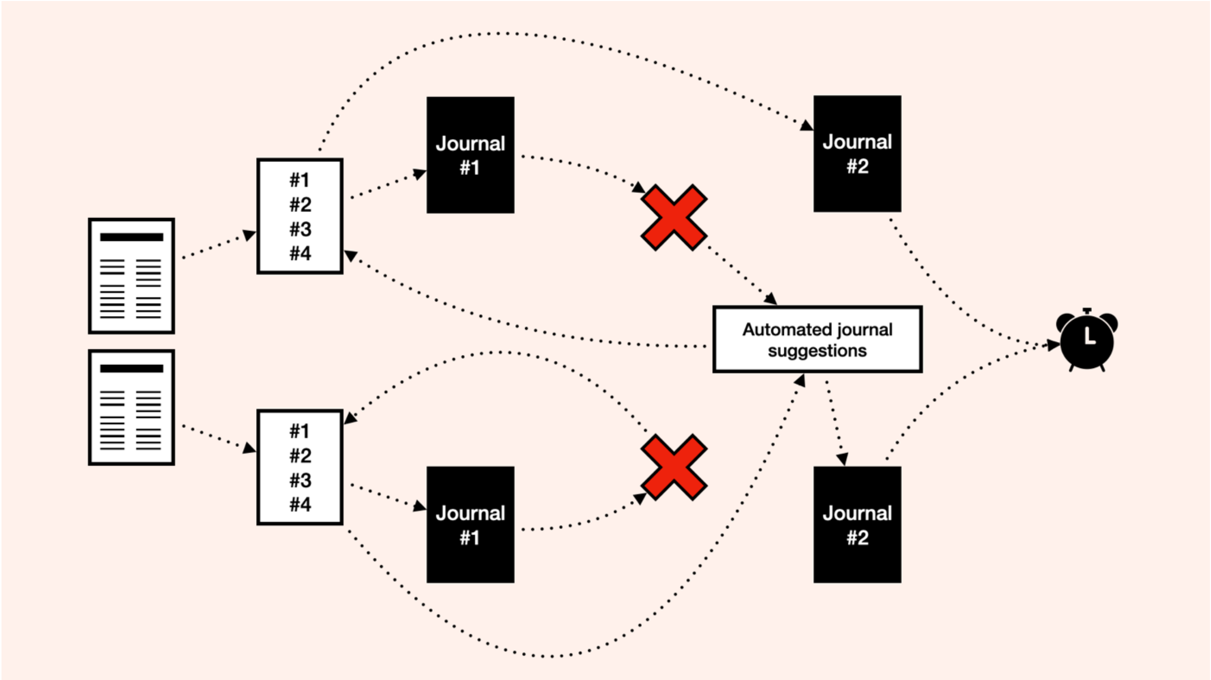

Figure 1 Diagram depicting an author's experience of trying to publish two academic articles. Several loops can be seen: both manuscripts were rejected by their respective journals and the author had to find other journals to resubmit to instead. Credit: Lisa Koeman, Elsevier

Dr Lisa Koeman is a Principal UX Researcher at Elsevier where she is doing research with academic authors, reviewers, and editors around the world. She is a board member for CHI Nederland with the aim of better connecting HCI/UX academics and practitioners. With a background in Human-Computer Interaction she particularly enjoys the intersection of digital services and complex problems.

Laughing All the Way to EPIC

EVAN HANOVER, *Conifer Research*

Humor is no mere "sense;" it is a social and cultural practice that enables each one of us to construct and recognize novel meanings and connections within our lives and worlds. The idea that humor relies on incongruity that defies our expectations has been around for millennia, but the mid-20th century work of Arthur Koestler elevated humor to be creatively on par with other artistic and intellectual feats. In this PechaKucha, I link my personal fascination/obsession with humor to Koestler's concept of 'bisociation' – the connection of two seemingly unrelated or incommensurate frames of reference – to tell the story of how I became the ethnographer I am today. Beginning with my discovery of the work of George Carlin and moving through a life of evolving engagement with humor – academically, at work, and on stage – I have developed the belief that what we laugh at can help us arrive at novel ideas and make our thought (and therefore action) nimble and resilient in the face of entrenched habits and assumptions.

Keywords: Humor, Creativity

HUMOR TRAINEES
ATTENDING A CHICAGO
RESILIENCE SEMINAR

"Humor Trainees Attending A Chicago Resilience Seminar" © Evan Hanover

Evan Hanover is a Director at Conifer Research where he has applied background in ethnographic methods and semiotics to study everything from travel on cruise ships to rapid diagnostic testing to cleaning your bathroom. He has degrees in anthropology from Cornell University and the University of Chicago. evan@coniferresearch.com

PAPER & PECHAKUCHA SESSION

Adaptive Tools for Resilient Futures

Resilience requires us to go past established processes, tools, and frameworks as our guides. These presenters shift our perspective on the theories that guide our work, renew our attention to what we know about positionality, reflexivity, place and practice, and even consider ways in which our practices are performative acts. These presentations session share a commitment to ensuring that the techniques we build and employ are flexible and adaptive to dramatic change.

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Theory Instruments as Tangible Ways of Knowing

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While ethnographers and the data they produce already play a role in affecting industry practices, there is potential to integrate anthropological ways of seeing and knowing into a shared transdisciplinary design praxis. In a series of design research experiments, we have taken a pragmatic and playful approach to physicalizing theory. The result is a set of 'Theory Instruments' that transform theory into tangible interaction. Theory Instruments scaffold knowledge production by encouraging new ways of seeing organizations, products, users, and the relations between them. We present two of these instruments, Actor-Network Rings and Reciprocity Balance, through a case study with a design team at a health product company that wished to generate new design concepts from field material. Theory Instruments helped bridge the gap between the epistemic modes of knowing employed by ethnography practitioners and the technical and tacit modes of knowing familiar to design practitioners. This new mode of collaboration helped them to cross worlds, cultivating a more resilient, transdisciplinary praxis.

Keywords: design anthropology, design practice, theory, interdisciplinary collaboration, ways of knowing

MAKING ANTHROPOLOGICAL WORK VISIBLE

While ethnographic fieldwork is increasingly celebrated as valuable to design and innovation, the potential of anthropological theory remains virtually invisible and underexplored in industry practices. This has consequences. When the analytical work required to turn field data into interesting insights takes place 'backstage' (Forsythe 1999) it is often not given the space or the credit it deserves. More importantly, analysis and the particular ways of seeing that inform analytical processes remain inaccessible to the designers. As a result, the ethnographer's role may be minimized to data collector and reporter, while the designer's distance from the greater theoretical context may limit their capability of transforming insights into meaningful design decisions.

We address these problems with our design research study, exploring how the anthropological theory that underlies ethnographic method may become more visible. To that end, we developed a set of *Theory Instruments* [Figure 1].

These instruments turn theoretical concepts into tangible and playful resources for collaborative analysis while sensitizing and challenging practitioners and researchers to gain new perspectives on field material. By foregrounding theoretical perspectives and keeping them active during all stages of design research, Theory Instruments open up new design potentials and new transdisciplinary competencies. Like musical instruments, each Theory Instrument 'plays a different tune' in analysis, highlighting different perspectives, potentials, and challenges embedded in the empirical material. When used as a set, the instruments create a richer ensemble than one instrument alone. As in an orchestra, this requires players of diverse expertise, each playing different instruments, to produce 'harmonious music'.

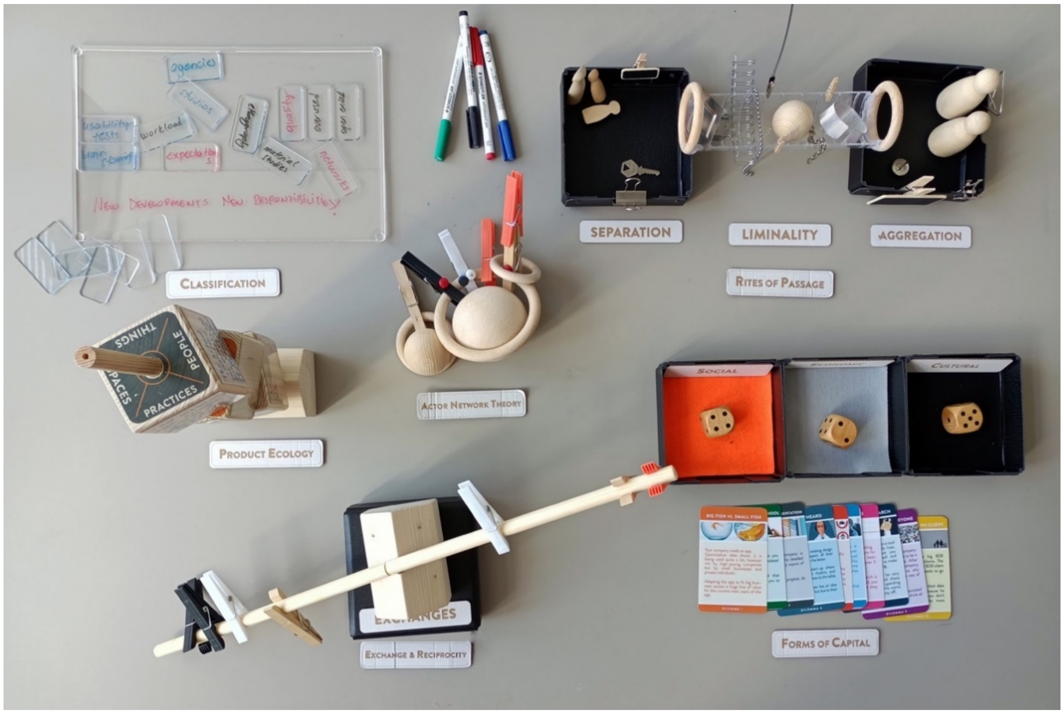

CLASSIFICATION
SEPARATION
LIMINALITY
AGGREGATION
RITES OF PASSAGE
THINGS
PEOPLE
PRACTICES
SPACES
PRODUCT ECOLOGY
ACTOR NETWORK THEORY
SOCIAL
CULTURAL
EXCHANGES
EXCHANGE & RECIPROCITY
FORMS OF CAPITAL
NEW DEVELOPMENTS NEW RESPONSIBILITY

Figure 1. Six *Theory Instruments*: (top) Classification Boxes, Rites of Passage Tubes, (middle) Product Ecology Cubes, Actor-Network Rings, (bottom) Reciprocity Balance, Capital Cards. Photograph © Ayşe Özge Ağça, used with permission.

We have already deployed the instruments in collaboration with several industry partners. Recently we used the instruments to analyze user-research data and develop initial design ideas in a workshop with anthropologists, UX researchers and designers from a large health product company in Denmark. Afterwards, one of the anthropologists used the phrase "magic moment" to describe the experience:

> "These are ways of thinking that are very classical for us [as anthropologists], but to see what it can do to play with them in this way, to instrumentalize it, go through the process, and hear what others get out of it, how these perspectives suddenly become simple and easy to talk about for all of us, together, I am totally amped up about it. Because now we have actually reached another shared level of understanding of these people [the users] than what I have experienced before. I find that really cool, that with these instruments we get a shared baseline for creating an understanding, but actually also to move that [understanding] into a solution space."

For the anthropologists, the theoretical perspectives were not new, but were in fact an integral part of the analytical work they were already doing. What was new, however, was the particular way of engaging anthropological perspectives in design practices, and the effect it seemed to have on the non-anthropological colleagues. The engagement and co-creative energy sparked by using the Theory Instruments, the "magic moment" can be described as a 'collective effervescence', a kind of social electricity that happens when people interact with a shared purpose. Émile Durkheim, the sociologist who coined the phrase, notes the importance of *things* as symbols of this effervescence: “A collective feeling can become self-conscious only by being anchored in a material object,” (2001[1912], 180). With collaboration-made-material and theory-made-tangible, Theory Instruments were able to foster a kind of transdisciplinary creativity in the ideation process. We see Theory Instruments –both the instruments and the research around them— as a contribution to a more resilient shared praxis.

So how do these instruments work? How did they come about? And what potentials and challenges do they elicit for the resilience of ethnographic practice and design? We will use this paper to answer these questions.

FROM PERSPECTIVES TO WAYS OF SEEING

As university researchers in a design department, we are regularly working with practitioners in industry, while training new generations of researchers and practitioners. In 2020, some of our collaborators contacted us, feeling that they had exhausted their user-research methods without drawing forth particularly new or relevant insights. To investigate this frustration, we initiated the project New Challenges in Interaction Design, which has involved several stages of studying practitioners and the emerging issues they face in their everyday work (Kjærsgaard et al. 2021).

Early on in the project, we identified areas where practitioners were particularly underprepared for the changes brought about by the post-digital era we are entering into: where ICTs and the IoT are so prevalent that these concepts are naturalized as inherent to popular notions of technologies, where data collection is taken for granted, and where connectivity is assumed. Our practitioner collaborators, trained in an information era, have become overwhelmed by too much data, increasingly data-driven processes, and the integration of digital components and data harvesting into longstanding product lines. These changes infiltrate the products themselves, their use and implementation, design processes, organizational cultures and structures, and the human-human and human-object relations implicated at all of these levels. In an earlier paper (Kjærsgaard et al. 2021), we describe these findings and our first design research experiment aimed at solving some of the issues we identified. By the end of that experiment, we had come to the conclusion that what design practitioners needed most, in order to remain effective and relevant in a fast-changing field, was fresh perspectives.

A Pragmatist Approach to Theory and Design Anthropology

We initiated a collaboration with an interdisciplinary team of UX researchers developing health products in a large company, attempting to combine their search for fresh perspectives on field material with our own academic interest in exploring the potential role of anthropological theory in design.

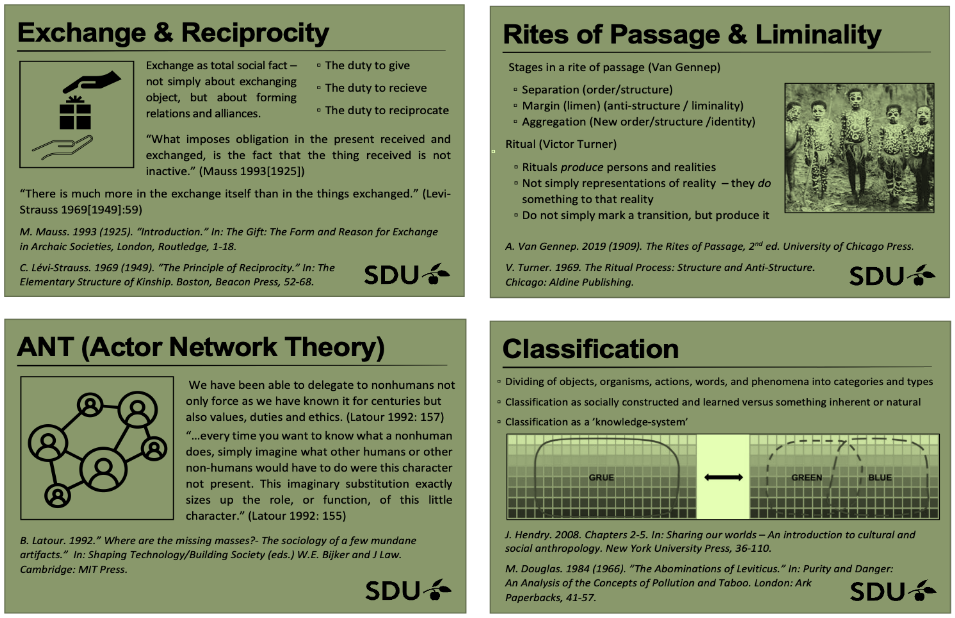
Working from a pragmatic approach to theory, where theoretical concepts “…are not representations or copies of how the world is, but are tools, with which we transform, engage, and cope with the world…” (Brinkmann 2012, 38), we strove to provide these interdisciplinary teams with a set of theoretically inspired lenses that would help them *see* their products and users in new ways.

Each theoretical perspective should serve as a lens that would make particular aspects of the world visible. We were particularly interested in how different lenses could make different things visible, and how shifting between these lenses might help challenge taken-for-granted perspectives, while creating awareness of other potential ‘ ways of seeing’ not only ‘what is’ but also ‘what might be’.

Building on Otto and Smith's (2013) understanding of design anthropology as a distinct style of knowing "…characterized by a particular use of theory aimed at generating concepts and new framework or perspectives" (11), we explored how theory might serve as 'sensitizing concepts' (van den Hoonaard in Otto & Smith 2013, 11) that do not only guide the empirical research process and ethnographic description, but rather move beyond analysis and description to the generation of *design concepts*. In other words, we investigated how anthropological theory and its analytical application become instrumental in challenging implicit assumptions within interdisciplinary design teams, opening up the design process through re-framing these assumptions (Kjærsgaard 2013).

Theory Cards as a Set of Lenses

Our first design research experiment was to develop *Theory Cards* [Figure 2] to explore how theoretical concepts might instigate perspective shifts, to meet these new challenges posed by digital connectivity (see Kjærsgaard et al. 2021).



Exchange & Reciprocity

Exchange as total social fact – not simply about exchanging object, but about forming relations and alliances.

- The duty to give
- The duty to recieve
- The duty to reciprocate

"What imposes obligation in the present received and exchanged, is the fact that the thing received is not inactive." (Mauss 1993[1925])

"There is much more in the exchange itself than in the things exchanged." (Levi-Strauss 1969[1949]:59)

M. Mauss. 1993 (1925). "Introduction." In: The Gift: The Form and Reason for Exchange in Archaic Societies, London, Routledge, 1-18.

C. Lévi-Strauss. 1969 (1949). "The Principle of Reciprocity." In: The Elementary Structure of Kinship. Boston, Beacon Press, 52-68.

Rites of Passage & Liminality

Stages in a rite of passage (Van Gennep)

- Separation (order/structure)
- Margin (limen) (anti-structure / liminality)
- Aggregation (New order/structure /identity)

Ritual (Victor Turner)

- Rituals *produce* persons and realities
- Not simply representations of reality – they *do* something to that reality
- Do not simply mark a transition, but produce it

A. Van Gennep. 2019 (1909). The Rites of Passage, 2nd ed. University of Chicago Press.

V. Turner. 1969. The Ritual Process: Structure and Anti-Structure. Chicago: Aldine Publishing.

ANT (Actor Network Theory)

We have been able to delegate to nonhumans not only force as we have known it for centuries but also values, duties and ethics. (Latour 1992: 157)

"…every time you want to know what a nonhuman does, simply imagine what other humans or other non-humans would have to do were this character not present. This imaginary substitution exactly sizes up the role, or function, of this little character." (Latour 1992: 155)

B. Latour. 1992." Where are the missing masses?- The sociology of a few mundane artifacts." In: Shaping Technology/Building Society (eds.) W.E. Bijker and J Law. Cambridge: MIT Press.

Classification

- Dividing of objects, organisms, actions, words, and phenomena into categories and types
- Classification as socially constructed and learned versus something inherent or natural
- Classification as a 'knowledge-system'

J. Hendry. 2008. Chapters 2-5. In: Sharing our worlds – An introduction to cultural and social anthropology. New York University Press, 36-110.

M. Douglas. 1984 (1966). "The Abominations of Leviticus." In: Purity and Danger: An Analysis of the Concepts of Pollution and Taboo. London: Ark Paperbacks, 41-57.

Figure 2. Examples of *Theory Cards*: Exchange & Reciprocity, Rites of Passage & Liminality, Actor-Network Theory, and Classification. Images © Mette Gislev Kjærsgaard and Jessica Sorenson, used with permission.

The Theory Cards effectively communicated unfamiliar theoretical ideas from design anthropology in a playful context familiar to the UX practitioners and industry professionals we were working with, adding a new layer to the insights we had drawn from the material in the previous analysis workshop. We saw potential in working with theories as 'sensitizing devices' (Otto & Smith 2013), whereby a design practitioner could try on new perspectives, by employing new theory cards at any given moment, with the hope that this sensitivity would lead to richer insights, which might then yield new design directions.

However, the experiment did not seem to have the generative effect on the design process that we had all hoped it might have. The designers were still left frustrated with insights that they did not know how to use. We had to interrogate what it was that theory was doing, and *not* doing.

Theory as a Way of Seeing

Theory's oldest roots are *thea* (like theater) meaning 'a view', and *horan* meaning 'to see'. *To see a view* – that is what theory is and what it does. In the pragmatic understanding, it is a schematic, a tool, a framework, or an instrument that gives us the ability to develop a new perspective. Theory Cards kept theory tethered to a particular codified way of knowing (as knowledge). With Theory Cards, practitioners were given *the view*, but they were struggling to turn that view into something actionable. As one of the designers said:

> "We know a lot about how they [the users] live and what other products they use and everything, but it doesn't influence or give us strong direction for the rest of the business ... So, I know I might tread on some toes, right? But somehow it needs to be boiled down and delivered into something that's actionable. If it's not actionable, we can't use it." (Reflection session, May 2021)

What we wanted to do differently moving forward was to provide practitioners not only with the noun-theory (*a view*) but with the verb-theory, a way of *seeing* beyond what 'is' to what 'might be'. We had a hunch that if we could introduce the practitioners to theory as a flexible, repeatable, but always-different experience, and demonstrate the merit of shifting perspectives, we might contribute to new ways of seeing that may inevitably underlie a change in praxis –a way of *doing*. This would help them develop a resilient way of knowing and practicing design, while breathing new life into academic theories and renewing our relevance as ethnographers.

MATERIALIZING MEANING-MAKING

With the ambition of meeting practitioners in the space between our academic practice of epistemological production and their design practice of material production, we endeavored to make theory more *tangible*, literally – with the aim of avoiding the knowledge-transfer problem we had previously encountered. Building on a long tradition of materiality in design (e.g., Brandt & Messeter 2004; Buur & Sitorus 2007) and our more recent experiences cultivating engagement through data physicalizations (Buur et al. 2021), we sought to bring anthropological ways of knowing to bear on the design process, by translating the analytical power of theory into material interactions.

This Research through Design (RtD) experiment (Stappers & Giaccardi 2017) began with an interrogation of theories and materials in an ideation process, followed by several iterations of prototyping and testing, and ultimately led to a playful and pragmatic tangible interaction set which we call *Theory Instruments*.

Matching Qualities of Theories with Meaningful Materials

Our prototyping process began with an exploration of particular theories that we selected as general enough to be interesting to design teams across a range of industries where we had collaborators. We looked at grand social theories from traditional anthropology that had to do with kinship and relationship- and identity-formation, as well as more modern theories or fundamental concepts emerging from the materialist turn with a focus on bringing things into the social, and finally some more specific theories relating to design and users' interactions with objects.

We examined theories for their essential qualities – what is it that these theories draw our attention to? We took note of keywords and telling examples from source texts which might later inspire material interaction. For example, we looked at the back-and-forth, push-and-pull qualities of 'reciprocity', at the heart of Marcel Mauss's 1925 theory on 'gift' relations and Claude Levi-Strauss's 1949 later contribution to this area of anthropological theory. This early ideation process was coupled with lo-fi prototyping with tinkering materials we had on hand, such as cardboard, LEGO, poster gum, and reclaimed toys. We tried to make apparent the reciprocal quality of exchange in relationship-building, through the use of a potluck storytelling probe, for example, but this prototype lacked the physical back-and-forth qualities that we'd identified as essential to gifting. In our iterations, we shifted toward a balancing rod, which better captured the physicality of the theory itself. In this way, we examined the extent to which it was possible to translate theory into interactions with things.

Beyond the material challenges of physicalizing theory, we had to face some epistemological challenges to instrumentalizing theory. Theories constitute blocks of thought well established within the academic world, and adherence to particular schools of thought can be rather dogmatic (Jöhncke 2021). Therefore, we had to shake off the fear of using theory in the "wrong" way. We leaned on the Foucauldian approach to theory as dynamic, not belonging to the theorist, but serving as living tools for organizing our ideas about the world: "*Je n'écris pas pour un public, j'écris pour des utilisateurs* [I don't write for an audience, I write for users]," (Foucault 2001, 524). It was clear from the beginning that when physicalizing theory we could not completely portray all of a theory's dimensions. So, we stripped the theories down until we found what was useful for our purposes. Certain elements had to be highlighted and others to be dimmed as we aimed at simplifying the interaction in the material space.

A Set of Theory Instruments

So far, we have produced six different instruments based on classic theoretical concepts from anthropology like *rites of passage*, *exchange & reciprocity*, *forms of capital*, and *classification*, as well as some somewhat newer theories on product interaction like *Actor-Network Theory* and *product ecology* [1]. This menagerie provides a set of lenses that are general enough to be able to apply to different types of people, practices, and products, while still having specific relevance to health product company and user material we were working with at the time. Another criterion was that the theories would be different enough to bring out complementary insights in the material. In this paper, we focus on just two of the instruments used in our case study.

Actor-Network Rings [Figure 3, left] is an instrument based on Actor-Network Theory (ANT) (Latour 1992), which highlights the complex network of people and things that make up our sociomaterial worlds. The theory brings attention to the interactions that happen between human 'actors' and non-human 'actants' in fulfilling a particular 'program of action'. That is, ANT helps us to understand that while artefacts are agential [they act on us/the world], things don't 'do' anything by themselves. We are likewise dependent on technologies – making ourselves with the things we create (van den Hoven 2012). With this instrument, we aim to increase this complex web's physical perceptibility and show the effects of the human and non-humans on each other.

Actor-Network Rings is a set of wooden rings, wooden balls, differently colored plastic and wooden clothespins, and magnets. The wooden rings represent networks with attached plastic clothespins as non-human ‘actants’ and wooden clothespins as human ‘actors’. The anthropomorphism of objects inspired us to attribute humanness to the softer, more natural shape of the wooden clothespins. Wooden balls have a manipulative property that lend themselves to describing the ‘program of action’. Removing or shifting clothespins triggers ‘delegation’ or ‘imaginary substitution’ of roles between the actor and actants. The placement of magnets on clothespins displays ‘disciplining’ of the actor by the role assigned to the objects. While ANT is perhaps one of the more difficult-to-understand theories, the Actor-Network Rings instrument has been the most universally appreciated of the six instruments, applicable in nearly every design setting in which it was tested. The success of this instrument –as we demonstrate in the case study that follows— can be attributed in part to its simple and open-ended design with seemingly innumerable reconfiguration and interpretation possibilities.

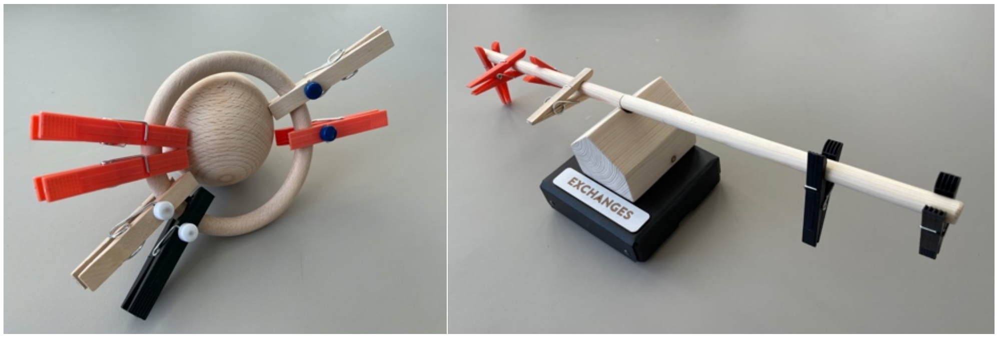


Figure 3. (left) *Actor-Network Rings*, based on the socio-material theory of networked relations Actor-Network Theory (ANT) (Latour 1992); (right) *Reciprocity Balance*, based on relationship-building theories of exchange and reciprocity (Mauss 1925; Lévi-Strauss 1949). Photographs © Jacob Buur and Ayşe Özge Ağça, used with permission.

Reciprocity Balance [Figure 3, right] is based on relationship-building theories of exchange and reciprocity (Mauss 1925; Levi-Strauss 1949). The instrument consists of a rod, differently colored plastic and wooden clothespins, and a wooden house-shaped foundation. The rod rests horizontally atop the wooden house, with clothespins attached along the length of the rod. Depending on how many clothespins the participants attach to the rod, and how far along the rod they are placed, it can tip to one side to the other. Two participants sit across from each other. When the participants attach a pin as a gift or gesture, the other must receive and reciprocate with another pin on the other side of the balance point. Participants can attribute meaning to the color and material choices of the pins they place, and the number of pins may give insight into the meaning or weight of these exchanges. For instance, short-term, transactional interactions are indicated by pins placed close to the center (demonstrating immediate give and take) while deeper relationships are indicated by pins placed farther out, indicating a longer interval between gift-giving and reciprocation.

In order to put Theory Instruments to the test, we reopened our collaboration with the health product company. Our collaborators had not come much further in translating their user insights into new product concepts and they wanted to take our collaboration further by integrating academic theoretical perspectives into their early-stage front-end development process. Neither of us wished to revisit the knowledge-transfer problem we had previously encountered, and we took a chance on Theory Instruments as a way through the disciplinary divide.

PLAYING THE INSTRUMENTS

We facilitated a workshop using the Theory Instruments with a group of in-house UX researchers and designers from the health product company. The design team used the instruments in a shared sensemaking and idea-generation session that would inform their design directions. The Theory Instruments were to serve as 'boundary objects' (Star & Griesemer 1989), helping this interdisciplinary research and design team get beyond knowledge-sharing and begin engaging in processes of transdisciplinary knowledge production.

The workshop lasted a day and was divided into two main parts. In the first part, Theory Instruments were used to analyze video-based field material from a particular theoretical perspective. In the second part, Theory Instruments served to support ways of imagining and evaluating design possibilities while staying within the same theoretical frame of mind. There were four participant groups, each playing one of our six instruments. The entire workshop was organized around the musical instrument metaphor, with a focus on the integration of essential parts into a harmonious ensemble –which is what a good theoretically-grounded analytical process ought to yield.

Part one consisted of three steps:

1. **Tuning**: Each group examined what their particular instrument (with its embedded theoretical perspective) would sensitize them to see in the field material (user videos). This step involved getting to know the instruments, reading the instructions on how they worked, and exploring the theoretical 'sounds' they were able to 'play'.
2. **Rehearsing**: The groups watched videos from field studies and used the instruments to make sense of what they saw. What kind of 'music' could be made with this particular instrument when coupled with the field material?
3. **Auditioning**: Finally, each group showed to the other groups what they had learned while playing (with) the instrument. What insights and surprises had their particular perspective brought forth?

In the second part of the workshop, each group used the same instrument to explore what new design opportunities might be seen from this particular theoretical perspective. Or, to stay with the metaphor, the groups examined what kind of new music might be 'composed' out of these various 'tunes'.

The second part was also divided into three steps:

4. **Improvising**: Based on insights from the first round, each group wrote a number of what-if questions to challenge taken-for-granted perspectives and to point towards new design possibilities.
5. **Composing**: After choosing a what-if question to work with, each group then watched a new user video and used their instrument to 'compose' future scenarios based on the what-if question and the video.
6. **Performance**: In the final performance, each group illustrated how the new 'composition' would play out from the particular perspective of their instrument.

In what follows, we present examples from the groups that 'played' the instruments Actor-Network Rings and Reciprocity Balance.

Case 1: Actor-Network Rings

The Actor-Network Rings group used the Theory Instrument to explore differences between cooking your own healthy food and relying on fast food – as this is a dominant theme in the video observations. They started discussing what concerns a network in this case and what actors and actant are involved, continuously consulting the 'manual' to check if they have understood the different terms correctly. While discussing what they have observed, they gradually built two competing 'network' rings.

The strength of the instrument is that the tangible materials commit the group members to develop a shared vocabulary: wooden pins represent actors (people) and plastic pins represent actants (objects). As they built, we sensed a shift in their way of seeing the problem, from a prevailing focus on the individual user and his or her decisions, toward an understanding that many things and people act together to create (un)healthy eating habits. The instrument seemed to encourage 'seeing' a larger complexity.

As they worked, the players pointed some of the pins on each ring upwards to create a sort of stand that could support a wooden ball – representing what Latour calls the 'program of action' – in this case, eating a healthy meal. One of the players explains:

> "My first thought is that this one (pointing to a wooden pin in the network) his [human] support in the network, that he [the person in the video] in fact needs someone to discuss this with …he is in a place where all of these ones (pointing towards pins that are standing up), well he is nearly able to keep this one up (tilting the wooden ball), because he is strong when it comes to preparing and cooking healthy food."

One may say, the players are 'rehearsing' with the instrument, trying out what kind of music it can 'play'. It took at least three upright pins to balance the hovering ball. Besides looking for enough actors and actants, they came to discuss what 'supporting' the program of action means, how the support for 'heathy eating' and 'fast food' is vastly different.

In the audition stage, user insights, theoretical vocabulary, and material affordances became intricately connected as the group played for the other workshop participants the piece of analysis brought forth by the Actor-Network Rings. They set the scene by introducing the theory and its different components, then started building networks and programs of actions that reflected what they had seen.

> "What is worth noticing is that of all the ones [people] we saw in the video, none of them have the support, they have no one but themselves (showing a ring with only one pin standing)…"

They went on to show how the users' experience with healthy eating stood in contrast to another network users tend to rely on for food, namely the fast-food network. The point was made very tangible toward the end of their audition as a small wooden ball balanced delicately on the many pins supporting the fast-food network, while a big ball in the central network –representing the program of action "healthy eating"-- had few pins to support it and fell heavily onto the table [Figure 4]. The audience felt the weight of this particular program of action and the lack of support currently on offer to users.

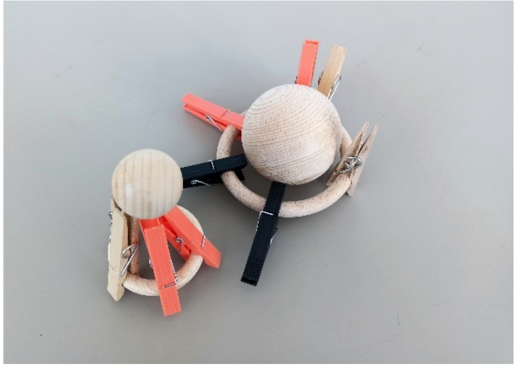


Figure 4. An *Actor-Network Rings* configuration, depicting the fast-food and health-eating support networks. Photograph © Ayşe Özge Ağça, used with permission.

In the second part of the workshop, the players started improvising new configurations of pins on the Actor-Network Rings, removing or replacing them. In ANT, this analytical exercise would be termed 'imaginary substitution', envisioning the roles the remaining actors and actants must play if one element is removed. As one of the players said:

> "…so we try to maintain some of those things that makes this one [fast-food network] attractive. It isn't necessarily the food itself… There it's always open, you drive through, and that's what makes him [the user] make this choice."

The players started seeing new ideas of how the networks might be configured differently to uphold the desired program of action. Using the same instruments, they now started to move beyond the analysis of 'what is', and began exploring ways of seeing 'what might be'. Hence the final performance of their new 'composition', started out like this:

> "What has happened since last time [the audition] is that now this one (pointing to the large wooden ball) is flying. It now has a solid base."

They continued to describe which pins were added, changed, or 're-designed' to provide what could be a solid support for the program of action they were designing for, namely "healthy eating". There is, of course, an element of speculation involved here. Still, their re-design is strongly based on their analysis of the actors and actants that already form current networks supporting particular programs of action in the users' worlds.

> "What you can see from the model [the new imaginary network they have built] is that the human support is, is laying down [the pin is flat on the table] he does not get any human support, instead he gets this one (pointing to a new plastic pin representing one of their design ideas), that is his support…We quickly realized that there was something strong over here (pointing to the fast-food network) so instead of trying to disregard that, the idea is to try to change it towards the better, so that it might actually help towards maintaining his [the user] general program [of action] (pointing to the wooden ball)."

What became clear for the players while working with the instrument was how current products speak to the individual, but never individuals acting independently, as they always rely on other actors and actants --both when they succeed and when they do not. For the players, this constituted a new way of seeing not only the users, but also the product design space.

With Actor-Network Rings, the players no longer focused on designing objects or services, instead they identified existing and potential supports for a particular 'program of action'. Design solutions were, therefore, not found in individual design objects, but rather in the way particular actors and actants were brought together to accomplish an intended task (a program of action). Some of these actants they identified do not exist yet, and therefore could be potential new products for the company to develop in future. This outcome aligns with our initial shared goal of generating new product directions from theoretically inspired co-analysis of user data.

While still emergent, the use of the instrument shows both analytical and generative design potential. We claim that the particular theoretically inspired 'way of seeing' supported by the instrument was extended beyond pure analysis to inform ways of reframing design problems and their solutions –making user research data more actionable for practitioners.

Case 2: Reciprocity Balance

The Reciprocity Balance group explored "healthy living" from the theoretical perspective of gift exchange (Mauss 2002 [1925]), focusing on how particular relationships were formed and changed by health issues, and the exchange of tangible and intangible 'gifts' related to these health issues. The players explored the relationship between the company and its users, shaped by exchanges taking place around a particular healthcare service. Based on the video material, the players placed pins on each side of the balancing rod to represent 'gifts' given and received in this exchange, while discussing their perceived value (represented by weight). At first glance, it seemed that the company provides many gifts: information, guidance, better health, and perhaps even a longer life, while the user reciprocates with money and loyalty alone. However, on closer inspection, the balance is not so simple. As one designer said:

> "The [service] gives a lot of information [to the user], but what comes back [to the company]?"

The designer put the pin representing information at the very tip of the balancing rod on the user's end, indicating that this is a valuable gift from the company. Then, they discussed what value the information actually provides, and whether this information is perceived as a gift by the user. Based on examples from the video, the interface designer suggested:

> "One reaches a saturation point. Oh, all of the things I need to do [in order to become healthy], and if I do not manage then it is my own fault."

The players moved the pin representing information closer to the middle. It might not be as valuable and heavy a gift as they first assumed. Moreover, the players realized that information goes both ways, as the service requires data from the user in order to provide useful healthcare advice. They agreed that the biggest gift provided by the service is better health. Still:

> "It might be that you [the service] give me better health, but you are also reminding me that I am [unhealthy]."

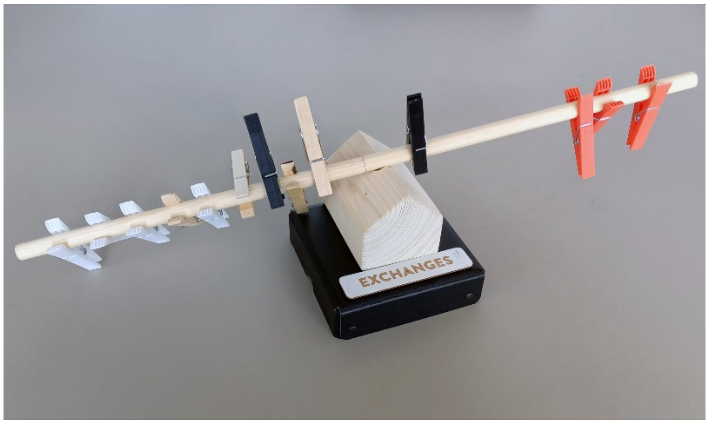


Figure 5. The *Reciprocity Balance* instrument depicting the imbalanced relationship between service-provider and user. Photograph © Ayşe Özge Ağça, used with permission.

The players decided to distinguish between physical and mental wellbeing, as well as between prolonged life and quality of life, as it seemed increasingly clear that for the user these might not be the same. As they continued to discuss, they also attached, moved, labeled, and re-labeled the pins. The service side of the Reciprocity Balance grew increasingly heavy from all the gifts provided by the user [Figure 5].

> "…the thought of being able to live longer versus all this (pointing to all the things that the user has to give up). A lot of these things, they are more important on a daily basis than the fact that I get this (pointing to what is received from the service), but I don't know."

In the end, it was not only the pins that shifted, so did the players' understandings of the exchange. They started questioning who gives and receives which 'gifts', and how their 'value' might be experienced differently by the different parties involved. Along the way, it became increasingly clear that the value of the service provided by the company could not be understood independently from the exchange it becomes a part of.

Playing the instrument at the 'audition', the players demonstrated how various 'gifts' are exchanged between company and user to make the service relationship work. The Reciprocity Balance instrument disclosed an imbalance in the exchange, as the company's services seemed insufficient reciprocation for what the user had to 'invest'. Their performance ended with the question:

> "What are you willing to pay for better physical health?"

This question then set the scene for the second part of the workshop in which the players explored a situation in which the user *receives* rather than *gives* quality of life in this exchange. As the players generated ideas, they no longer used the instrument hands-on, instead they began relying on familiar tools like notes, post-its, and drawings. Still, the gift-exchange way of seeing and the reference to the material interaction of restoring balance pervaded their discussions and ideas.

Even if the players' use of the Reciprocity Balance instrument might seem a little simplistic and sometimes not entirely in tune with the theoretical perspectives that inspired it, from a pragmatic perspective, it still did the job. The instrument provided a shared vocabulary and a new way of seeing the relationship between the company and their users, as well as the challenges and potentials embedded in that.

When taken together as a duet (just two instruments), already the music becomes richer. With the Actor-Network Rings, the design team expanded their ways of seeing the users and the product design space. With the Reciprocity Balance, the design team developed a new way of seeing the user-company relationship, as mediated by the product and its services - and as a result, reconsidered their understanding of users' experience of health. These tangible ways of seeing generated new product ideas, but perhaps more importantly, restructured roles in knowledge-production within the design team.

THEORY AS TANGIBLE INTERACTION

In the shadow of a long history of tangibility, we would like to position Theory Instruments in relation to other traditions in design and anthropology.

'Design games' as a method (Brandt & Messeter 2004) is by now well accepted in many areas of collaborative design. These tools typically employ snippets of particular field observations in the form of pictures, maps, or cards to engage participants in making sense of material, sharing their own experiences, and pushing forward toward solutions. Like with design games, we use (design) material to scaffold active conversation between participants in turn-taking (Lucero et al. 2016). But where design games are typically tailor-made to each project, our Theory Instruments are designed to be general enough to be applied in different design contexts and toward different ends. The Theory Instruments are designed around the theoretical, not the empirical. Thus, they are open for analysis of any sort of specific field material or situation.

Turning to anthropology, we build on 'elicitation techniques' from the social sciences and humanities, where researchers engage participants in material interactions to both elicit and document data in co-creative processes. By handing the participant the pen, the researcher relinquishes some control of what counts as data. Methods like timeline interviews (Adriansen 2012), robot mapping (Sorenson 2018), or photography (Pink 2001) can be classified as elicitation techniques. Likewise, Theory Instruments can be used to generate data. However, the integration of theory into the material interaction also enables these instruments to be used analytically, in collective sense-making processes. Just as traditional elicitation techniques disrupt the knowledge-production hierarchy in data collection, Theory Instruments disrupt the typical knowledge gaps between design practitioners and user researchers.

Drawing from other tangibles developed for/with industry, we take inspiration from the use of physical material to scaffold 'talking with hands', as seen in LEGO Serious Play (Gauntlett 2007) and Tangible Business Models (Mitchell & Buur 2010; Buur et al. 2013). These methods use physical material (Lego, hardware store haberdashery) metaphorically to support conversations about abstract concepts, like 'organization', 'manager', 'value proposition', 'customer', or 'value chain'. In a similar manner, we provide familiar physical materials, like clothespins, with meanings tied to abstract, theoretical concepts, like 'actors' or 'gifts'. Our incorporation of rather open and interpretable materials, that have an unfinished quality, allows for the same kind of improvisation and unpredictability inherent to this tradition.

Finally – and this seems the most challenging – we try to incorporate kinetic behaviors in the instruments, to build in the chance of 'Oops Moments' (Mitchell et al. 2013). These are moments of surprise when the material behaves in unexpected ways. As the materials play a role in a metaphoric understanding, participants will feel compelled to explain (away) such dynamic behaviors within the metaphor. They constitute a very vivid form of the Schönian 'backtalk' (Schön 1992). This way of engaging kinetic resources is also prevailing in the 'object theatre' tradition (Ryöppy 2021) where artefacts are given metaphoric meanings and hence appear to behave in strange and unexpected ways. A few of the instruments manage to incorporate components which may introduce this kind of dynamism – the Actor-Network Rings perhaps most of all. When differently configured, the resulting networks may roll away, collapse, or stand firmly in place.

Theory Instruments build on existing tangible traditions by adding a generalizability not inherent to design games, while still encouraging specificity in the use of the instruments. They incorporate the participatory aspects of elicitation techniques, with a focus on both process and product (data analysis and data creation). The materials and forms selected integrate the improvisatory, metaphorical, and unpredictable qualities that have made tangibles so pervasive in participatory design and research traditions.

With this rich history of tangible interaction, both in anthropology and in design, what we hope to contribute is the addition of theory as a foundation for tangible design, reuniting theory and method. We see potential in Theory Instruments and the physicalization of theory to move toward a shared transdisciplinary design praxis, where knowledge hierarchies are minimized by a shift away from codified and siloed knowledge toward a co-production of situated knowledge, where participation is facilitated by material interaction, where metaphor encourages developing shared understandings of complex and abstract subjects, and where engagement and ownership is more evenly distributed. By opening up the praxis in this way, we might enable new ways of seeing that have implications for design practitioners' processes and products, but may also establish a new robustness for ethnography.

TOWARD RESILIENT TRANSDISCIPLINARY DESIGN

In our experiments with Theory Cards, we succeeded in bringing new perspectives to the design table, using theory to bolster the co-analysis process and develop richer insights. In our subsequent design research experiment with Theory Instruments, we developed tools that went further, to facilitate new shared ways of seeing within design teams. Our key contribution to both of these methods is the repositioning of theory within ethnography in industry praxis.

When we interrogate the role of theory in ethnography, we are really bringing back into question the role of the ethnographer –who has almost been made irrelevant to the method by its naturalization into other fields of practice. Within design –and indeed, among our own collaborators—ethnographers often struggle to extend their role beyond collecting and delivering insights. At the same time, the design teams often have difficulty transforming these insights into design specifications. One of the well-documented challenges we have seen first-hand is this knowledge-transfer problem.

An explanation for this phenomenon is that the knowledge generated in one field of practice, may not be readable in another. An ethnographer does more than collect and report (Macaulay et al. 2000). The ethnographer *selects* data, informed by a particular set of theories (ideas about the world), and *interprets* this data through theoretical lenses to distill them into insights. If the design team receives only the insights, without the appropriate ways of seeing to understand them, how can they possibly be expected to use them?

With Theory Instruments, we emphasize interpretation as critical to ethnographic method, and we physicalize this quality with metaphorical materials. By bringing the rest of the interdisciplinary design team into this meaning making process, we destabilize the knowledge hierarchy surrounding field material and theory. The role of the anthropologist and UX researcher changes from collecting information about users 'providing a view' on their world to facilitating (design anthropological) "ways of seeing" field material and design possibilities. By embedding anthropological ways of knowing into the instruments themselves, we circumvent the knowledge-transfer issue and instead knowledge production is distributed across the team and through their bodies. The effect is a flattening of the collaboration, bringing the typically cognitive and epistemological praxis of anthropology and the material world of tacit and technical spaces of design together in a shared design space.

These are precisely the changes we saw in our own design research experiments with the health product company. We moved from giving them lenses providing a particular view, to engaging them with instruments that integrate different ways of seeing directly and physically in processes of sense-making and idea generation.

After the experience with the Theory Instruments, we received feedback from the designer who was so frustrated at the start of our collaboration with receiving more user insights that seemed apparent and were not "actionable". By moving from 'a view' to 'a way of seeing' (with your hands), the designer was finally able to understand the significance of the users' experiences for the design process:

> "I mean, now we have worked with this little tool that does so that **you don't just have in your head** what you're working with, but **you can actually see it**. Such a simple rocking function (pointing to the Reciprocity Balance instrument) that we can actually understand, like an installation, and look honestly at the situation. I think this weighing of the different things, that it becomes a bit unbalanced, it shows that [the users] are getting a ridiculous amount of information… I think it could be really cool to use this as a tool in our everyday practice…" (Reflection session, March 2022)

Through this pragmatic and playful approach to engaging with theory, Theory Instruments can diminish disciplinary divides, helping ethnographers to make visible (and tangible!) their ways of seeing the world, facilitating sensemaking processes, helping designers to find meaning in user research insights to generate new design ideas, and helping organizations to respond to new challenges. In this way, we aim to move ethnography toward a more resilient transdisciplinary praxis in design.

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NOTES

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1. Each of these theories offers different perspectives on the sociomaterial world. *Rites of passage* concerns social identity, as described by Arnold Van Gennep (1909) and later Victor Turner (1969). Theories of *exchange* & *reciprocity* concern the formation of social relations through gift-giving, as described by Marcel Mauss (1925) and elaborated by Claude Lévi-Strauss (1949). Pierre Bourdieu (1986) introduced us to various *forms of capital* that act as social currency. *Classification* concerns the way we conceptualize information using language, and how our mental concepts and words influence each other, often attributed to Mary Douglas (1984). John Law and Bruno Latour (1992) introduced *Actor-Network Theory*, which describes the networked relations of people and things. Jodi Forlizzi introduces a related theory that adds contextual and temporal layers to the network with her theory of *Product Ecology* (2008).

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Beyond Zoom Fatigue

Ritual and Resilience in Remote Meetings

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COVID-19 has precipitated a massive social experiment – the sudden shift of millions of knowledge workers from their traditional offices to homes or other remote work locations. This has inspired heated debates and new ways of imagining the future of work. This paper hopes to contribute to a better understanding of these changes by reporting on the results of several dozen in-depth interviews with remote workers from a variety of geographies, industries and professions. We focus in particular on their experiences of remote meetings, with special attention to complaints workers have with their current implementation. As we learned, workers' complaints tended to be driven by social – rather than productivity or technical – concerns. We explore this social dimension in depth, propose a framework for thinking about meetings as rituals, and suggest how this emphasis might inform the design of technology to support remote collaboration.

INTRODUCTION

Among the many long-lasting impacts of the COVID-19 pandemic, the sudden mass adoption of social distancing created a situation that would have been unimaginable a few years ago. Millions of knowledge workers discovered they no longer need to travel into an office on a daily basis – or even at all. This sudden and massive shift in the "where" of work has already resulted in considerable experimentation and debate among firms, affected real-estate values and cities, inspired numerous new technology ideas, and even given rise to a named syndrome that, while perhaps not medically recognized, is immediately recognizable: "Zoom Fatigue". These changes pose serious questions with respect to both individual and organizational resilience: If this is the future of work, is it sustainable? What will its long-term effects be on workers and their firms?

We hope to contribute to a richer understanding of this phenomenon by providing an account of the aspirations and concerns of some of these workers themselves. This paper describes research on workers' experience of remote meetings via the mediation of PC technologies, smart phones, and videoconferencing software during COVID. As we will discuss, most research on remote meetings has focused on practical issues, what or emphasizing productivity. while leaving relatively unexplored the fact that meetings are also social events, sometimes intensely so. Our research suggests that, for workers, the social dimension of meetings is actually the more consequential consideration. The introduction and continued use of technology may pose greater challenges to our social resilience than to productivity.

Our research approach

In the spring of 2020, shortly after most of the world adopted strict pandemic response measures, we began a process of interviewing individuals from a wide diversity of professions, industries and geographies, to understand their experience transitioning to remote work. Notably, these interviews were all conducted remotely, as was all of our team's collaboration on this project. This presented us with an opportunity for auto-ethnography that also helped inform this work.

Our research involved three distinct phases, which provided us with a progressively richer understanding of remote collaboration. In Phase I, we conducted roughly three dozen interviews, during which we documented a wide variety of stories about diverse, often creative uses of remote collaboration technologies. Some were decidedly not about work – a baby shower featuring pre-arranged delivery of gifts and goodies, a large and raucous family gathering that joined multiple households on two continents, or "game nights" involving the clever use of multiple game boards. Nonetheless the majority of events participants described for us were business meetings.[2] As a way of coping with the pandemic and enforced social distancing, most of our participants had positive things to say about technology use, reflecting what appears to be a surprising consensus: remote work actually works! (Barrero et al, 2021; Parker et al, 2022) This is not to say it's without its challenges. Newer employees lacking organizational network ties struggle with career advancement (Barrero et al, 2021); many workers – but especially mothers – report longer work hours and corroding work-life boundaries. This includes a sense of being overwhelmed by meetings (ibid). Many of these challenges, not surprisingly, implicate technology and point to opportunities for improvement. Over the course of our Phase I interviews we thus paid special attention to technology-related complaints, ultimately compiling these into a list of roughly 75 items that we organized in terms of audio, visual or general technical issues.

We made use of this list in Phase II of our research. These interviews, conducted in the Fall of 2020, focused explicitly on discussions of remote work-related meetings, using a retrospective approach. First, we asked participants (n=24) to provide us with a catalogue of their recent meetings. Then we asked them to comment on whether they'd experienced any of our list of technology breakdowns in these meetings. We also asked them to comment on how serious any given breakdown was, using a five point scale, with a score of 1 representing no serious consequences, while a score of 5 is the most serious. The result of this exercise was a matrix containing thousands of cells, documenting the seriousness of our breakdowns across dozens of meetings. This scoring method helped us recognize patterns in the ways different technology breakdowns have on different types of meetings. Just as importantly, it provided us with an occasion for gathering stories about what made some breakdowns "serious." These stories, it turns out, drove the primary insights of this paper.

Before turning to that discussion, we provide a brief description of Phase III to round out this introduction to research methods. After Phase II we engaged in a series of structured brainstorm sessions with members of our larger organization – primarily engineers involved in machine learning algorithms research. These brainstorms resulted in a set of application or usage concepts, which became the focus of Phase III interviews, wherein we tested these concepts with research participants (n=17) to have them rate and comment. Analogously to our Phase II interviews, the feedback ratings we received from participants were useful, but far more valuable were the associated discussions, which helped us understand participants' attitudes regarding the potential for AI in facilitating remote meetings.

MEETINGS AS RITUALS

The breakdowns we documented and discussed in Phases I and II of our research point to a seemingly straightforward, foundational insight about meetings: in addition to their more explicit practical or instrumental purpose, meetings also have a social dimension, which plays a significant role in how attendees experience them. This was clear in our Phase II problem-ranking data. In a majority of cases where participants ranked problems as either "serious" or "very serious", their reasons involved a negative *social* outcome. Negative social outcomes were sometimes described at a personal level, for instance perceived damage to one's professional reputation or identity, or potential damage to one's relationship with colleagues. In other cases, negative social outcomes were described at more of a group level – for instance, loss of cohesion or a general sense of awkwardness among teams. In both cases, we distinguished such outcomes from what might be considered "practical" outcomes, including lost productivity, a disrupted meeting agenda, or other outcomes associated with work productivity.

The prevalence of the social dimension came as a mild surprise; there is little in the technological literature on remote meetings that would seem to predict this. The field of Computer Supported Cooperative Work (CSCW), for instance, has focused squarely on remote collaboration for decades, with an enduring attention on making meetings more effective (Yankelovich et al, 2004) by focusing on such practical concerns as meeting preparation (e.g., Bicharra Garcia, et al, 2004), facilitation (Hughes and Roy, 2004), note-taking (Exposito et al, 2017), information summarization (Shang, et al, 2018), or information visualization [Shi et al, 2017]. Indeed, despite the fact that the CSCW community has explicitly embraced the use of ethnographic methods (Schmidt and Bannon, 2013), there has been an equally explicit tendency to focus ethnographic methods on how people "get things done" (Blomberg and Karasti, 2013; Randall et al, 2021). This is especially true of ethnomethodologically inspired ethnographies, which have achieved relative prominence in CSCW, and which focus on practical accomplishments as a kind of remedy to older social scientific studies of work that "actually miss out *how* it is done: they miss the 'doing', of work, how work activities are achieved in the actions and interactions of those doing the work" [Button, 2012: 678].

Thus, despite much attention in CSCW to the social production of work in the context of meetings, there is little regard for the work of social production. Indeed, as (Niemantsverdriet and Erickson, 2017) lament, technology-focused research "…seems driven by a view of meetings as an uncomplicated venue where people simply work together to pursue collective goals like solving problems, designing artifacts, and making decisions." To counter this, and understand the anxieties that technologies can produce, we propose a perspective that views meetings as *rituals*. We use the term intentionally and carefully, aware of both the deep history of research on ritual in anthropology, and the many pitfalls such work has presented: an overemphasis on the distinction between instrumental and symbolic action; the bracketing of rituals as entirely distinct from other human endeavors – or conversely, the suggestion that all human behavior is infused with ritualism. By calling out the ritual dimension of meetings we hope to draw attention to two aspects:

First, as many anthropologists have noted, rituals are sites for the (re)production of social order. Within the tradition of symbolic anthropology, Turner (1969) rescued the concept of ritual from its association with vestigial cultural conservatism to show its functioning in broader social and cultural processes. Geertz (1973:96) famously notes that rituals provide both "models of" and "models for" the functioning of a natural order, to produce an alignment between beliefs and dispositions. Bell (1992:85) describes this process as "redemptive hegemony." "To maintain and adapt their assumptions about the order of reality persons and groups engage in degrees of self-censorship or misrecognition, as well as legitimation and objectification in the guise of more stable social structures."

Not surprisingly we find an abundance of rituals in modern corporations, whose reliance on the careful alignment of functional constituents and components is perhaps unsurpassed among all forms of social organization, and whose embrace of the notion of "culture" has been absolute. "Culture has been the fertile soil that has enabled both their purpose and their strategy to come to life and drive extraordinary performance at scale." (Joly, 2022). Onboarding events, mandatory trainings, and performance reviews are a few obvious examples that come to mind, but so are meetings. While they may seem to represent the epitome of mundanity, or even drudgery, meetings are sites where the (re)production of corporate culture and social ordering is enacted, and occasionally challenged. A few anthropologists of meetings working outside the technology industry have demonstrated this understanding. Schwarzman (1989), among the first and most extensive anthropological treatments of meetings, emphasizes the extent to which they "generate the appearance that reason and logical processes are guiding discussions and decisions, whereas they facilitate …relationship negotiations, struggle, and commentary" (1989:24). Sandler and Thedvall (2017:15) similarly point out that meetings are "*makers*, making willing revolutionaries and endlessly improvement-oriented workers and rule-internalizing bureaucrats."

A second aspect of our interest in meetings-as-rituals is the way in which they both manage and produce risk. At a fundamental level, commitment to any form of joint action may include risks, as Jones et al (2015) point out and demonstrate in the context of team formation meetings at hackathon events, which are self-consciously styled to mimic the world of tech startups, "an economy of fast-paced, free-market, high-concept innovation cycles presupposes a mobile, flexible, technically adroit, and calculatingly self-interested workforce—who, for all their potential gains, may still pay a high human toll." (341). The hackathon setting, though "artificial" in some respects, nonetheless casts high relief on both risks of commitment to joint action (exploitation, loss of autonomy, or entanglement in problematic endeavors) and how those risks are managed through complex displays of interest, hesitancy, reassurance or commitment.

We may not all attend hackathons or work for technology startups, but meetings can still feel risky and produce anxieties, as anyone who has felt the pressure of a client pitch, a challenging internal deliberation, or a gaffe in front of a large group of unfamiliar colleagues knows all too well. This anxiety is partly a result of the fact that meetings, like other rituals, are settings where attention to *performance* itself is heightened. A number of studies, mostly by ethnographers of communication (e.g., Hyme, 1964; Baurman, 1975; Irvine, 1979), have documented how communicative practice marks a setting as "special", thus calling sharper attention to itself. Bell (1992) calls this process "ritualization": "a way of acting that specifically establishes a privileged contrast, differentiating itself as more important or more powerful," than similar actions in other more mundane settings. Heightening attention to performance and imbuing the event with power raises the social stakes. Meetings are where workers explicitly perform hierarchy, transparency and trust, relationships to colleagues, and perhaps most fundamentally their identities as *professionals* "…capable of 'making themselves,' a proposition that remains cherished across the liberal political spectrum today" (Boyer, 2013: 406). This is true not just for the most obvious speeches or presentations, but on all kinds of actions. The performance or signaling of attention, as we discuss below, may be as consequential and fraught as the performance of a speech.

A number of resources are mobilized in service of ritualization, including the choice of setting, the inclusion or exclusion of particular participants, the arrangement of bodies, the allocation of turns at talk and, of course, the use of language and nonverbal communication, take on significance to the extent that they both call attention to themselves and imbue the event with greater power. Remote meeting technologies may interact with these other resources in complex ways, for instance by introducing unfamiliarity, instability, or shaping the types of verbal or nonverbal behaviors that are available to attendees. Fair or not, a worker's performance and status within an organization may hinge on the functioning of a technology that is out of one's control. As Saatçi *et al* (2020), demonstrate, even a momentary loss of network connectivity can result in a remote employee being first teased, then admonished, and finally excluded from an interaction, despite an ostensive organizational interest in inclusiveness. Our own participants were clearly aware of such risks as they rated and then discussed the relative seriousness of various technology issues. The most highly-rated (*i.e.,* most serious) technology problem on our list, for instance, was inexplicable silence, primarily because of the anxiety it produces:

> "I'm giving a presentation and all of a sudden I can't tell if anybody is even listening. It's the most horrible feeling. Have I lost them? Are they upset? Is the network down?" (P2-7)

Even when functioning as designed, technologies can introduce social risks. Our participants' stories included instantly recognizable episodes such as embarrassment over home environments caught in the video background, or audio inadvertently shared because someone forgot to mute their microphone:

> "My background is pretty good – it has a nice painting in it, so I like to leave it on. But you can also see part of my kitchen in the corner, and sometimes my son walks through with his shirt off after he gets out of the shower. He's seventeen so it looks like I've got a half-naked man walking around behind me. It's disturbing." (P2-10)

> "My biggest fear is people hearing me eating while I'm on a call…" (P1-24)

These stories are instantly relatable and funny to many of us, and yet they also show how carefully we must manage our professional identities in the era of digital liberalism. Bookshelves in the background are acceptable, messy kitchens are not – or more correctly, messy kitchens may not be acceptable for certain types of meetings, involving certain types of participants. This contextually dependent sense of propriety is partly what draws our attention to the ritualistic aspect of meetings, not unlike different norms for self-presentation for going to a picnic versus going to church.

Oversharing, as mentioned, can affect more than individual identities – it can harm relationships, as some of our participants recognized. Unfamiliarity with technology, or carelessness in the use of it, can have devastating consequences for professional relationships:

> "Once I was in a meeting and someone IM'ed a nasty comment about the speaker to the person who happened to be sharing their screen [with all meeting participants] at the time. It was awful. You have to be super careful about stuff like that." (P2-1)

While malfunctions and oversharing provide dramatic examples, many recognized more subtle social effects of technological mediation. Even in more mundane, internal meetings, the use of videoconferencing could degrade one's experience of meetings, particularly for individuals who may already feel somewhat disadvantaged.

> The thing we are missing is having a social and emotional connection with colleagues, since the remote meetings started. People don't put their cameras on, so

> we can't see them. It becomes slightly tough to make connections. When I don't have that connection it makes it harder for me to speak confidently, especially in the larger review meetings (P2-6)
>
> In our weekly staff meeting, it's much more subdued than it used to be. People wait for longer – they have their microphones muted. It creates a delay so people aren't jumping over each other. People wait – they don't add much. It's a particular dynamic with the participants. It's an energy change I've noticed. People are not only dealing with a whole change to their teaching strategies and teaching world. There's an uncertainty that they're doing it right. People are a little more timid, so they don't interject. It's a different dynamic (P2-2)

Here the interaction of technology and ritualization can be seen through the lens of a negative example. Hesitancy and timidity due to unfamiliarity with colleagues can be further exacerbated by awkwardness created by latency between speaker turns that comes from the need to unmute microphones, leading to a downward spiral of participation. Not only is the social dimension of the meeting undermined, but its productivity as well.

The factors contributing to risk in meetings

As part of our analytic process in Phase II, we extracted from our research participants' stories those factors that seemed most salient and productive as resources for ritualization, particularly those that seemed associated with increasing attendees' sense of risk.

Table 1: list of factors affecting individuals' assessment of social risk in meetings

Cluster	Factors
General Meeting Characteristics	• Meeting type or purpose • Formality of the setting • Number of participants • Social status of participants
Meeting moment	• Mode of interaction / speech event (presentation, sales pitch, info sharing, decision-making, assessment, collaboration, camaraderie) • Centrality of focus • Turn-taking norms • Code structuring practices
Individual's place in the meeting and moment	• Role in the meeting • Familiarity with and relationship to other attendees • Perceived expectations of others w/r/t participation, sharing information or artifacts, etc.

Table 1 provides a rough summary of this analysis, along with a provisional organizational framework. One set of factors, which we termed "general meeting characteristics" are perhaps most salient, and certainly most commonly referenced in stories from our interviews. These include the number of participants in a meeting, the ostensible purpose of a meeting, or the level of hierarchical difference among attendees. Meetings involving large numbers of people, meetings with customers or superiors, or people with whom one is less familiar, are all considered higher risk.

> "Our most important meetings are the client review meetings, and the business development meetings… These are where we focus on the relationship with the client." (P2-15)

Technology breakdowns in meetings involving either superiors or clients were considered most consequential. Some participants explicitly noted that the same breakdown may have completely different social consequences depending on who is in attendance:

> "If that happens in a stakeholder meeting it's catastrophic. If it happens during staff we just laugh about it." (P2-12)

"Meeting moments"

Despite the salience of relatively static features of context such as meeting type or status of attendees, a significant number of our participants pointed out that breakdowns are more consequential at certain *moments* within a customer meeting.

> "Like when you're right in the middle of an important exchange with a customer, and you drop, it just totally kills what you're trying to do. You miss some key clues to what they're saying. That [rapport] is hard to get, and then…it's just lost." (P2-14).

Though none of our participants ever used the phrase "meeting moments" (as we came to call them), the idea surfaced in many of our interviews, and not simply because of technology breakdowns. Many of our participants, reflecting an intuitive understanding of ritualization, recognized that meeting moments are created through practice, for instance, by shifting the social framing of a meeting from the business at hand to something more focused on camaraderie.

> "We usually end our meetings with a few minutes of loose chat, the water cooler chat that we no longer have. We've tried to integrate that into the [remote] standup." (P2-4)

They also note that technologies can introduce risks is by undermining such practices. Multiple participants described to us how they were once able to seamlessly accomplish such shifts in meeting moments, and how they have struggled to do so since COVID:

> "When you're at the office, you have all kinds of opportunities for chit-chat…We don't get that anymore. Our manager has a time set aside for personal updates at the end of every weekly staff meeting but mostly it's just painful." (P2-13)

P2-13 explained that such moments felt more like *"an interrogation…Everyone has to take turns telling the manager what they did over the weekend."* This points first of all to the fact that "informality" is as much a reflexive accomplishment as "formality" (cf., Irvine, 1979). It also points to how technology may itself shape the kinds of resources that groups can use to fluidly create different modes of interaction on the fly. In this case, by enforcing what Goffman (1966) called a "central situational focus" for all participants, along with distinct structuring of turns at talk, remote meeting technologies undermine "chit chat" and turn it into a more formal and moderated interaction. This reshaped interaction increased a sense of awkwardness and social risk, making it "painful."

APPLYING OUR ANALYTIC FRAMEWORK: TWO EXAMPLES

In this section, we look at the process of ritualization more closely, with a particular focus on how the mediation of technology in remote or hybrid meetings may support or interfere with individuals' attempts to establish the power of an event or produce social outcomes through communicative practice. We focus specifically on a question of "visibility", to show how different meeting circumstances can drive widely divergent technological needs and experiences.

Example 1: technology, visibility, and the performance of trust

Some meetings or moments are notable for the extent to which both communicative performance and the very structuring of the work within the meeting are explicitly focused on producing a social outcome. Such a situation was described to us by one of our research participants (P2-8) whom we will call Tabitha for the sake of narrative.[3] Tabitha is the deputy director of labor relations for a mid-sized municipality. Her job is to negotiate contracts with the city's labor force. COVID created two acute problems for Tabitha. First, it dramatically reduced the city's operating budget. The city urgently needed to find ways of saving money, so Tabitha was tasked with meeting representatives of the city's various employee organizations (which she refers to as "bargaining units") to collaboratively find ways of saving money through concessions in salaries or benefits. Tabitha's second challenge was how she had to do this negotiation: in online meetings, a tool she hadn't used for this purpose prior to the pandemic. It is important to note that Tabitha's objective in these meetings was not simply to find ways to save the city money, but to preserve the relationship of trust and good faith she had built up with the city's employees over many years. She now had to do this using a new medium. Perhaps not surprisingly, she described the current negotiation process as "very challenging."

A key element of Tabitha's performance in negotiation meetings is the sharing of financial spreadsheets. Sharing of digital documents is obviously a common part of many meetings, providing both a resource for structuring activities and facilitating collaboration. For Tabitha, sharing spreadsheets was not just about conveying information, but also to facilitate the creation of trust, by demonstrating transparency and accountability, and providing her negotiating counterparts with the opportunity to actively interrogate different financial scenarios.

> We just share the financial information…show them our numbers. This has always been done in person. We came up with different numbers for the different bargaining units, and showed them – we need to save two percent. If you don't want to take it out of salary, we gave them this spreadsheet and they could plug in numbers so they could go play with it. We didn't want to dictate to them how to get to that. (P2-8)

Negotiation meetings, which typically include anywhere from four to eleven participants, had transitioned to Zoom during the pandemic. Prior to the pandemic, Tabitha would have conducted these meetings face-to-face:

> I've been doing this a long time. People have a tell – the way they ask a question helps us understand what they're thinking. It's really about being honest and transparent. That's why we put that out there. Really just being able to understand

> what's that question about and being able to answer it clearly for the other side. (P2-8)

Tabitha's performance of good faith negotiation depended not only a shared workspace that can be jointly interrogated, it also depended on her own ability to clearly see her counterparts and their reactions to different contingencies. The use of online meeting technologies precluded this. For Tabitha, this presented a major difficulty.

> I want to see people – I want to be able to read them. If we all met in a room we'd just be having a conversation. We're talking about this – this is what we're doing. Especially when they have questions – they might ask questions about their bargaining unit, why we are asking for this (P2-8)

Available technologies provide Tabitha with an adequate resource for performing transparency, but fail to provide her with the ability to see her interlocutors and their responses to her. This was most acute in the moment of joint decision-making, when agreement on cuts would result in both short term gains for the city and a long-term sustaining of the city's relationship with its workers. It was striking in Tabitha's story how inseparable these two outcomes were, and how much they were affected by technology.

Example 2: technology, invisibility and the performance of engagement

Tabitha's example demonstrates the desire for and utility of mutual visibility. This allows rich signaling and inferencing that helps interlocutors build a common sense of purpose and trust. In other cases, such rich visibility was clearly undesirable, at least to some meeting participants. This came up in the stories of many of our participants, but nicely articulated by one in particular, (P2-3) whom we will call Tom. As with many of our participants, Tom noted that in large, routine and formally structured meetings, such as his weekly update meeting, it is useful to be invisible:

> "It's probably about 70 or 80 people. I speak in this one as little as possible. It's not interactive. The CFO has his video on. It's put the meeting on, and listen, but have coffee. …Our video culture is essentially have as little video as possible... You don't want to have video on, nobody wants to have video on." (P2-3)

Such meetings are noteworthy for their asymmetry with respect to the way one's role in a meeting shapes one's desire for visibility. Speakers, as earlier quotes in this paper have attested, naturally desire audience feedback. But, in the case of larger, routine, formal meetings, audience members often prefer to go undetected. They mute their microphones and disable their cameras. This is not only to avoid potentially embarrassing over-sharing, as described above. Many of our participants said they remained invisible so they could multitask. They described overwhelming demands of both work and home life as primary drivers of multitasking behavior – along with a sense that their time spent in low-engagement meetings could be better spent on other activities. This tendency is clearly echoed in other research (Cao, et al, 2021). While people may multitask in response to pressures associated with productivity, the desire for invisibility while doing so has more to do with meetings as rituals. Well before COVID, Wasson (2006:114) recognized that "the pervasiveness of multitasking in virtual meetings thus requires us to reconsider the Goffmanian definition of meetings as involving a central situational focus."

Wasson's insight highlights that multitasking is ritual transgression. It needs to be done discretely and without disrupting that central situational focus, using indicators such as a mute icon or obviously inactive camera – what Goffman(1966) has called "interaction shields." The behavioral norm for remote meetings is still one of central situational focus.

> "I am a huge proponent of video conferencing etiquette. If we are on the phone, spending everybody's time, we need to be engaged and give the respect that's due and ensure that we are paying attention, that we are there." (P2-16)

This was explicitly stated by only a few of our participants, but clearly the practice was ubiquitous as described for us by others. A common anxiety among those who engage in shielding is being caught in their inattention: "… there have been times when I hear my name and I have to say 'sorry, can you repeat that?'" (P2-20). Yet, despite that anxiety, it is better to be caught out this way than to be obviously inattentive.

There are yet other reasons for remaining invisible. Activating one's audio and video in a larger meeting may be interpreted as an inappropriate attempt to perform hierarchy. As many participants told us, managers and leaders more often activate their video than those who report to them.

> "Anyone with a leadership position will keep their cameras on. They are used to being in the spotlight and the center of attention." (P2-4).

Managers themselves suggested they do so to demonstrate their heightened interest or engagement:

> "I turn on video on so people can see me – I think it helps with feeling connected." (P2-10).

Activating audio or video among those not in a leadership position might thus be perceived as pretentiousness – roughly akin to claiming a seat at the head of the table. As Tom describes it, people should remain invisible in meetings…

> …unless you are trying to suck up… if you want to impress the boss, you're there, you're in a tie for some reason, you're looking very sharp, you want to impress the boss 'oh very good point sir.' That's the kind of person." (P2-3)

Even this did not entirely explain people's reluctance to activate audio and video, however. Some participants noted that being on camera ultimately requires a performance of engagement (e.g., by constantly looking attentively at their screen) that feels both inauthentic and unsustainable. As one subject put it: "I just feel too exposed with video on, especially in larger meetings." (P2-7). Sustaining this kind of performance across many meetings per day or week can be exhausting. Surprisingly, this insight has received little attention in the extensive recent discussions of "Zoom fatigue" (Lee, 2020; Bailenson, 2021; Wiederhold, 2020). Giving employees the option to disable the camera amounts to giving them a modicum of agency in the face of what may amount to overwhelming demands to continuously perform alignment and engagement.

That simple insight lies at the heart of our connection of meetings, rituals and resilience and provides a simple but useful way of thinking about technological design: by focusing on the work associated with the many, diverse modes of socially consequential performance in meetings, perhaps we can create technologies that make meeting participation both more sustainable and rewarding. This demands both appreciating the types of social risks that workers face, the complications that technologies introduce, and the possibilities that we might imagine. In the section that follows, we build on the examples of Tom and Tabitha, discuss possible solutions that emerged in group ideation sessions, and explore how feedback to the resulting concepts deepened both our understanding of how to manage the social riskiness of meetings and potentially improve resiliency.

DESIGNING FOR SOCIAL AGENCY

As mentioned above, our research in Phases I and II provided inspiration for technology concepts that we then tested in Phase III of our research. Both of the concepts we introduce in this section feature artificial intelligence – specifically, machine learning technologies, reflecting the research focus of colleagues in the lab where we work. Despite the specificity of our focus, this phase of work was helpful in clarifying an important design insight that we believe applies beyond artificial intelligence: optimizing for what we call "social agency."

We begin with a technology inspired by Tom's example – the asymmetrical desire for visibility of audience in large meetings. Our extended team proposed to solve this problem by providing an intermediate layer between speakers and audiences. Instead of requiring individuals to share their audio and video feeds directly with colleagues, we proposed that they share such feeds only with an intelligent agent that could detect feedback signals (head nods, expressions of puzzlement, hand raises, or other routine expressions), anonymize and aggregate them, and report them to speakers as a stylized form of feedback that can be easily interpreted. This intervention, we thought, might be less invasive than being constantly on camera, yet less effort than manually using the "emoji" buttons [cf. 1] that became more common in meeting apps during COVID.

Similar ideas have been proposed elsewhere. Murali, et al (2021), for instance, describe such a system, which the authors developed into a functioning prototype and tested with users, reporting favorable reviews. We note, however, that such reviews come only from those acting as speakers or presenters in meetings, not from those audience members whose feedback was gathered. We believe this is a significant gap. Our own tests involved assessments from participants (n=17) presented with concept storyboards in two separate studies. One of those studies is documented in (Aslan et al, 2022). In both we found a clear asymmetry in the desirability of this idea, unsurprisingly matching the asymmetry in roles and performances associated with speakers versus those for their audience. While speakers/presenters may see the value in receiving feedback, people commenting form the point of view of audience members unanimously rejected it. Here is a sampling of feedback.

> "Engagement feedback feels like big brother is watching—not a fan at all." (P3-15)
>
> "It seems creepy. If I could have full control over it, I might be fine, but then it is extra work." (P3-13)
>
> "I would be worried about accuracy of my feedback. I am also concerned about privacy of data." (P3-14)
>
> "I personally do not like it because I multitask during meetings. My reactions could be towards something else. I have concerns around privacy and security as well." (P3-17)

In these comments we see two closely interconnected critiques. First, notions of "creepiness" and privacy were part of every critique, suggesting a discomfort with having an intelligent agent monitoring one's reactions. Superficially, there are obvious hints at discomfort with surveillance, including potential loss of control over who gets to view one's reactions. At a deeper level, the "creepy" reaction is the tacit recognition of what we have explicitly noted above – that even the signaling of feedback is a form of performance. One subject was explicit in this recognition:

> "I'd always have to have the camera on so the system will see the gestures I am doing – kind of performing on the camera, which could be distracting or silly."(P3-16)

This recognition of feedback signaling as a form of social performance stands in contrast to a view, underlying much work in deep learning, that human emotional expression is an objectively verifiable "detection" problem (cf. Goodfellow et al, 2015; Kunstler et al, 2021). The most immediate objection is the assumption that there would inevitably be inaccuracies, and these would result in extra work of monitoring the agent and correcting its output. As a consequence, the majority thus preferred the more direct manual labor of selecting their own expression from "emoticon" buttons. At heart, here, is a matter of social agency.

> "Autonomy and agency are ... top concern[s], so I would be more interested in manual… it feels invasive otherwise. It starts to feel unethical if you don't have someone's explicit consent to see reactions versus the active consent of clicking a button" (P3-5)

Participants maintained this insistence on social agency even in hypothetical situations where their feedback cues might be anonymized and aggregated. As one put it: "I have a fundamental mistrust of the ability of the system to understand nuance." Social signaling, particularly in the ritually charged context of a meeting, is a job for humans. As Goodwin (2000: 1491), explains: The production of social action is "a contingent achievement of relevant intersubjectivity," which "requires that not only the party producing an action, but also that others present, such as its addressee, be able to systematically recognize the shape and character of what is occurring."

It's not merely a matter that human interpretation, with its richer sense of context, is likely to be superior than machine intelligence at making a situationally correct interpretation. Human interpretation is also essential for participants to create a shared basis for subsequent social actions:

> Without this it would be impossible for separate parties to recognize in common not only what is happening at the moment, but more crucially, what range of events are being projected as relevant nexts, such that an addressee can build not just another independent action, but instead a relevant coordinated next move to what someone else has just done (Goodwin, 2000:1496).

Ambiguity and interpretive flexibility invite further action and engagement, whether that is affirmation, repair or other means of both ensuring the robustness of the interaction and a shared sense of meaning. We undermine this process when we introduce technology into the middle of it in a way that replaces such human agency with a set of pre-trained models.

Suchman (1993) anticipates the current argument in a much older study, and recognizes in such efforts the attempt to reduce the messiness of real-world social action to something more "disciplined" and governable. We argue that our participants' rejection of an automated feedback detector reflects this understanding, and testifies to the importance they place on retaining their own agency in the midst of ongoing social production.

Designing for social agency means providing meeting-goers with the tools to optimize their ability to engage in this messy, contingent achievement of intersubjectivity, in ways that suit both the situation and their own sense of personal or relational risk. Sometimes, when risks seem high or the benefits of engagement seem low, attendees should have the option of being both present and invisible, with simple tools for their own intentional expression.

Increasing social agency by enhancing embodied presence

This is not to say that AI has no place in meetings, or even in supporting the kinds of verbal and non-verbal performance that meetings entail. Rather, designing for social agency demands a more careful understanding of the type of problems that AI technologies might solve in the context of meetings, as well as the types of situations where such solutions might best apply. For a very different take on social agency, we turn to issues raised in Tabitha's example. As noted, Tabitha's performance of transparency and trust depended on shared access to given artifacts (spreadsheets) along with the desire for mutual visibility of participants, a situation much different than Tom's. While shared applications are common in remote meetings, rich mutual visibility is less so, particularly when shared applications are in use.

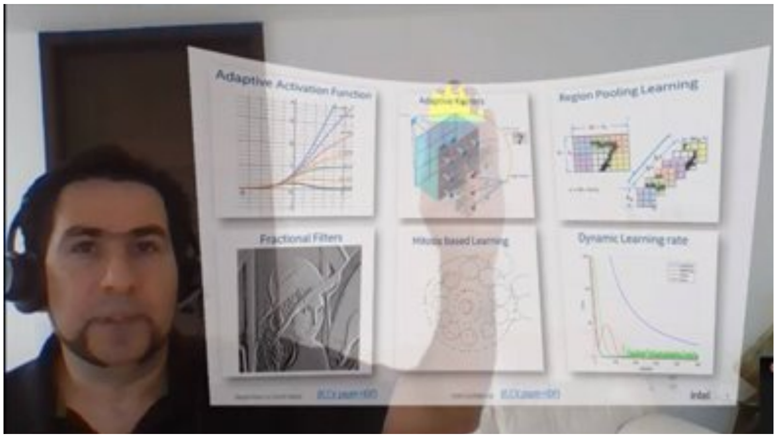

Figure 1: Mixed reality collaboration prototype showing a user superimposed with a shared application, using machine learning technology to provide body positioning and gestural controls

Figure 1 offers a visual introduction to a step our organization has taken in that direction – a prototype that features mixed reality combination of both participants and shared workspaces in a meeting.[4] As the image hopefully suggests, this technology superimposes in one scene both a meeting participant and a shared digital work surface, thus enabling a collaborator to see both the colleague and their actions in a shared workspace. Through the use of body positioning, gaze, indexical gestures, or even specific actions in the work space, colleagues can both detect and direct each other's attention, make their intentions clear, or better coordinate joint action, what Goodwin (2000) calls "embodied participation frameworks." A key first step in this regard may be the deceptively simple step of providing remote meeting attendees some analogy to the positioning of bodies in physical space, a capability we are undertaking both in the visual and auditory channels that, so far, seems quite promising. Though we are unable to go into detail in this paper, simply providing spatialized audio may enhance the creation of meeting "informality" by permitting more overlapping speech, a familiar feature in face to face interactions (Schegloff, 2000), or easier engagement in verbal play (Sherzer and Webster, 2015). In the case of sharing visual representations, as is somewhat evident in the figure above, the position of one's body relative the shared workspace provides information about the user's attention and potential next actions. We note that this prototype represents more than a simple superimposition of images. Machine learning algorithms are essential for its successful functioning. Skeletal tracking enables a mapping of motions or gestures to particular actions in the user interface, and to support the appropriate placement, alignment and sizing of the representation of the body, Note that this represents a very different use of deep learning than in the case of detecting audience feedback. In this case, machine learning algorithms provide a scaffolding or substrate for action, to support richer expressive potential to meeting participants – enhancing their social agency, rather than attempting to mediate social signals directly. By expanding the expressive repertoire, rather than designing to infer social signals directly, we believe we can enhance both productivity and provide users with resources for their own processes of ritualization.

CONCLUSION

These are but two examples from a range of activities within one ongoing research effort, which, as mentioned, is mostly focused on applications of artificial intelligence in remote collaboration. Our efforts thus represent only one small corner of what we believe is a much larger space of opportunities made possible by explicitly recognizing the social and ritual dimension of meetings. Moreover, by thinking about meetings as rituals we can ask how, and in what situations, technologies might undermine social agency and introduce risks, or conversely enhance participants' sense of agency. It's not that these considerations lead to simple and straightforward design directions. While it was relatively easy for us to distinguish between meeting types on the basis of relatively static parameters (e.g.,. meeting size, familiarity of participants), we are still pondering how to enable teams to fluidly transition among different social framings *in situ*.

Attention to the ritual dimension of meetings may be beneficial beyond technology design. First and most simply, current discussions of the future of work that focus too heavily on the simple binary distinction between "home" and "office" might do well to consider the ways that different types of meetings entail different roles and modes of participation that may be more or less appropriate for remote or copresent meetings. In social science research more generally, seeing the process of ritualization in meetings might be useful for connecting detailed attention to the ways ritualization in meetings connects with broader questions of social scientific interest, including the complex relationship among technologies, professional identity formation and institutions (Orlikowski and Barley, 2001) or issues of diversity, equity and inclusion. Considerable evidence has shown, for instance, that women bore a much heavier burden balancing home and work tasks during the early days of the pandemic, and that individuals from communities with limited technical access were seriously disadvantaged during the period of social distancing (Parker et al, 2022). The effects are still being felt, and have affected professional relationships and career trajectories. How might the effects of other, more subtle differences, such as preferences or toleration of latency in turn-taking, the use of gaze, or other factors affected by technology and contributing to ritualization create disadvantages for certain attendees?

Conversely, by looking closely at the relationship between technology and meetings-as-rituals, we might ask what new kinds of rituals, identities or relationships we might facilitate. How might novel ritualization practices disrupt traditional forms of disadvantage, subjugation or denigration of the work of certain people? How might designing for social agency provide workers with new ways of imagining work, or challenge prevailing ideas about what it means to be a professional (cf. Balka and Wagner, 2021)? What new social realities might we enable workers to create? More prosaically, how might we make meetings just a little less painful and exhausting? We are not yet done either with COVID or the changes it has wrought, there are still many questions to ask and hopefully more possibilities to imagine. Hopefully the lens we have introduced in this paper helps contribute to that endeavor.

END NOTES

1. This paper is dedicated in loving memory to our friend and colleague Suzanne Thomas, without whom this project would never have been completed. She led the early phases of research and analysis, and was first to note the distinctions underlying this paper. The authors would also like to kindly acknowledge Liubava Shatokhina for her thoughtful feedback on earlier drafts. Any errors or inaccuracies are the responsibility of the remaining authors.

2. We were not prescriptive about the definition of "meeting," recognizing that formal definitions of what counts as a meeting have met with difficulty (Sandler and Thedvall, 2017), and is more likely matter of family resemblance (Wittgenstein, 1953), that is, sharing no set of essential features, but rather displaying a set of overlapping similarities: attendance by multiple participants, embeddedness within a professional or bureaucratic setting, and a sense of instrumental or organizational purpose. Participants often explicitly described or named meetings in terms of their purpose or their attendees (e.g., "sales meetings", "client update meetings", "committee meetings," etc.)

3. This name, as with all others used in this paper, is a pseudonym

4. Our sincere gratitude to our colleague Julio Zamora-Esquivel (who is pictured in Figure 1) for his creative and technical wizardry and leadership in the creation of this prototype.

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The Ethnography of a 'Decentralized Autonomous Organization' (DAO)

De-mystifying Algorithmic Systems

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This paper details ethnographic methods, experiences, and insights from an ethnographer and an industry engaged complex systems engineer in how to study resilience in blockchain-based DAOs as a novel field site. Amidst digitization of numerous elements of government, work, and everyday life, 'Decentralized Autonomous Organizations' (DAOs) provide a field site for the generation of ethnographic insights into opportunities and limitations in organizational resilience in human-machine assemblages. As a broad organizational form, DAOs aim to enable people to coordinate and govern themselves through automated rules deployed on a public blockchain (Hassan & Di Filippi, 2021). DAOs are an experiment in 'computer aided governance'. These adaptive, socio-technical infrastructures are envisioned as capable of restructuring the foundations of governance in human societies (Merkle, 2016; Kolestsi, 2019; Garrod, 2016). Ethnography provides a qualitative tool to elicit the social dynamics of governance, adaptability, and resilience in a context of algorithmic governance and automation. By foregrounding the social dynamics of organizational adaptability and resilience, our resilience framework and vulnerabilities mapping tools help us to operationalize complex domains to de-mystify and re-humanize algorithmic systems.

INTRODUCTION

'Decentralized Autonomous Organizations' (DAOs) are an un-ignorable phenomenon in digitally enabled self-governance. But how can we study DAOs, what and where is the field site, and how can it be accessed and understood? This paper de-mystifies and re-humanizes blockchain-based algorithmic systems by utilizing ethnographic methods to study resilience in DAOs. We develop a novel qualitative research methodology on resilience and vulnerability mapping that can only be generated through ethnographic practices to focus on the human outcomes of technological systems. Here, resilience refers to the EPIC conference theme of 2022 as the 'ability to learn, adapt and evolve in adversity and changing conditions' (EPIC, 2022). The application of this method of 'resilience ethnography' in digital domains helps to foreground the social dynamics of how people utilize technology for adaptability.

The role of ethnographers and ethnography itself is changing in a world of increasingly digitized interactions. Past EPIC attendees have questioned the changing nature of ethnography amidst trends towards digitization. Our work becomes less experiential as we are required to 'study people who study screens' (Haines, 2018). Former models of ethnography break down in new environments and the way that ethnography provides insights in portraying culture and the human experience is evolving (Anderson, et. al., 2014). The study of 'the digital' invites new modes of ingenuity, experimentation, participation, data collection, analysis, and formulation. This includes the ability of ethnographers to 'become', participate, and form part of computational systems (Rennie, 2021). In doing so, ethnographic entanglements with digital systems iteratively shapes and forms the social implications of these systems.

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As algorithmic systems become more pervasive in digital infrastructures, governance, and the mediation of everyday life, ethnography remains a highly relevant practice to disambiguate the co-constitutive relations between humans and computation by accounting for where and how people are involved in algorithmic processes. The study of DAOs is a relevant field site to broader inquiries into where, why, and how people use automation in social institutions, how this may be navigated effectively, and the social benefits and drawbacks that automation affords. Ethnography offers the ability to generate a richer understanding of technical work and its social dynamics and sociocultural implications, including data, its provenance, the context and motives of design decisions, and outcomes in practice (Rattenbury & Nafus, 2018). Computational systems are available in the wild. for ethnographers to investigate. Ethnography can provide an "in-depth understanding of the socio-technological realities surrounding everyday software development practice" to uncover how practitioners organize themselves, make decisions, and apply certain methods, tools, and techniques (Sharp, et. al., 2016). The development of interactive systems of work and organization must recognize and systematically incorporate exploration of the intended social purposes, applications, and actual outcomes of new technologies.

In this piece, a computer engineer and an ethnographer engage in ethnographic participation and analysis of resilience in a DAO as a complex, socio-technical, algorithmic system. We present a novel DAO resilience mapping methodology and guiding research questions for the ethnography of a DAO, before demonstrating what ethnography in this niche field teaches us about the role of ethnography in analyzing resilience in socio-technical domains. First, we explore the literature on ethnographic practices in frontier digital domains and DAOs as a concept. We then outline our methodology to evaluate DAO resilience through vulnerability mapping, and detail the field site and our practices to undertake an ethnography of a specific DAO called "GitcoinDAO". Analyzing resilience in GitcoinDAO requires us to explore the key components of the purpose, structure, social, and technical dynamics of a DAO to ask what is being decentralized, made autonomous, automated, and organized? Through this analysis, we identify insights and limitations of governance and automation in socio-technical organizing. Finally, we discuss how ethnography in this digital domain provides qualitative feedback to the community on both the system itself and the environment it's operating in to make the social and organizational dynamics of distributed, digital organizations more legible to themselves and others. Our methods foreground ethnographic practices in machine-oriented worlds to uncover the social implications of socio-technical infrastructure where it operates.

BEING "IN" A DAO

"GM." "GM!" "GM!". The DAO was waking up in the PST time zone as members said Good Morning to greet one-another in the "Discord" chat application channel. Especially during Covid times, the 'GM' ritual became a way to present for work, to delineate between sleep and the next activity, and to find some human connection amidst isolation in the hopes of staying sane (Nabben & Maddox, 2021). Soon, it would be a different time zone checking in to the online channel. The message that was 'pinned' to the top of the Discord channel titled "getting started" laid out the Code of Conduct that governed participation in the DAO. After verifying one's humanity through a recapture bot, I was encouraged to 1. Read the Mission, 2. Update my server nickname to include my time zone, 3. Say hello in the "#intros" channel, and 4. Submit a pitch of why I should be admitted, which allows me to acquire tokens to become a member (usually through purchase (known as power through money, or 'plutocracy') or labor (rule through merit, or 'meritocracy')). The rules of engagement, perhaps comparable to other online communities in the Free and Open Source Software (FOSS) space to which public blockchains and DAOs adhere, specified that insults and harassment would not be tolerated, nor advertising or speculation on token price, don't share your passwords, and "we encourage productive conversation about how to govern and further decentralize this DAO project". There were tens of other channels dedicated to all kinds of activities, including operational working groups, a grants program, "inspiration", and "vibes".

Being "in" a DAO is about sharing attention over time. As digital denizens, DAO members are geographically dispersed but co-located through shared attention in online chat applications, forums, votes, and pursuit of collective goals. The experience of 'togetherness' manifests through co-location over time by repeatedly contributing to the attention space alongside your distributed others and caring about interests that relate to the DAO. This a-physical locale generates a social fabric through which each individual has a relationship with each other, and the DAO itself. Token ownership in DAOs is facilitated by the blockchain-based infrastructure, enabling a 'peer-to-peer' interface for direct interactions between constituents. Like other communities, relationships are developed through shared interests, experiences, and events, establishing a sense of purpose, belonging, and incentive alignment. People's daily routines of work and play, as well as their identity, can encircle the rituals and practices of involvement in the attention-consuming activities of a DAO.

Attention over time generates a history of shared cultural customs in the life of the organization as it transforms, from co-signing manifestos and releasing software code to recovering from hacks or software bugs (Nabben & Maddox. 2021). For example, everyone in DAOs that are built on the Ethereum blockchain remembers where they were and what they were doing when the first DAO experiment (aptly named "The DAO") was hacked and a substantial dollar value of funds were drained from the treasury (DuPont, 2017). The collective trauma of how rapidly it failed, the freezing of funds, and the infamous "fork" of the community which split to form "Ethereum" and "Ethereum Classic". It took a few years before the community could bring itself to again believe in decentralized, blockchain-based coordination and attempt to build the infrastructure to make decentralized organizations a reality. The sense of community that can be summoned in DAOs is powerful In a DAO, people are distributed, oftentimes pseudonymous, and rely on "trustless" infrastructure that allows them to transact with others without traditional trusted intermediaries. In practice, what this means is that trust is generated on different terms, where it's socially acceptable not to know the real identity of the person you are interacting with and peers in the network rely on reputation, behavior, and the rules of the platform. These rules form the 'consensus' of the governance by the infrastructure itself through economic incentives and penalties. The physical footprint of meetups and conferences is a shadow representation of the distributed online presence which manifests in constant face-to-face events that occur all around the world in a moving parade of travellers in crypto t-shirts, ready for the next 'hackathon'.

THE ETHNOGRAPHY OF SOCIO-TECHNICAL INFRASTRUCTURE

The theoretical frame employed in this research is one of an ethnography of sociotechnical systems. The phrase 'sociotechnical' refers to the interrelatedness of social and technical aspects of an organization or society. As such, sociotechnical system theory describes the complex interplay between people and technology in which neither the social (such as people, relationships, and structures), nor the technology (such as hardware, software, and processes), can be considered in isolation from one another (Golden, 2013).

‘Complexity’ in this context refers to the emergent nature of socio-technical systems through complex networks of actors, artifacts, and institutions (Smith, et. al., 2005). The notion of sociotechnical systems emerged out of management and behavioral research during World War II as an approach to optimizing organizational performance through self-management (known as “responsible autonomy”) and adaptivity for organizational change (Trist, et. al., 1951). A core value of this approach in Science and Technology Studies towards organizational design is that social and technical systems could be harmonized and balanced to optimize performance, satisfaction, and safety (Cherns, 1976). The theory has since been applied in other disciplines to refer to coherent systems of human relations, technical objects, and cybernetic processes that form large, complex infrastructures (Singh, 2014). In this context, governance is understood as the administration of such a system by the stakeholders themselves in a peer-to-peer fashion, rather than hierarchical management approaches which do not scale up to large sociotechnical systems (Singh, 2014).

By employing the use of the term ‘socio-technical infrastructure’ to describe DAOs, we evoke the need not just to conceptualize these as technical constructs but to pay attention to the prescient social dynamics that comprise the organization and its processes for organizing in the context of automation, how the social and technical components interact, and what is produced. Sociotechnical systems are often long-term enterprises, spanning the globe and serving vast communities, in which ethnography can help locate events in time and space (Ribes, 2014). Ethnography has been employed in sociotechnical organizations and infrastructures as part of a toolkit to analyze complex systems (Star & Ruhleder, 1996). Ethnography also allows us to see algorithms as heterogeneous and diffuse sociotechnical systems. Qualitative practitioners view algorithms as formulating part of broader cultural patterns of meaning and practice, rather than as objective procedural formulas or “black boxes” like computer scientists and critical theorists (Seaver, 2017). This makes ethnography a relevant and attractive methodology for the study of DAOs.

WHAT IS A DAO?

“Decentralized Autonomous Organizations” (DAOs) are a unique field site, that is an exemplar of a sociotechnical infrastructure for ethnographic engagement. At the core, “Decentralized Autonomous Organizations” (DAOs) are a group of people, coordinating toward a shared purpose, and using a blockchain to manage and mobilize a shared resource (most often a treasury of digital tokens, but this common resource can also be signaling of collective preference, knowledge, labor, or something else). What is automated is smart contracts, which are a piece of code residing on a blockchain network that automatically executes, controls, or documents an action according to pre-programmed terms of agreement. DAOs are relevant to broader societal structures as they seek to provide governance infrastructure as an institutional approach to solving coordination problems. In this way, DAOs are demonstrative of the messy, social, governance question of ‘how to order society’ that humans have grappled with for thousands of years but re-presented in digital domains. DAOs are scalable human-machine assemblages, meaning technologies that are inseparable from humans, or technological beings (Savat, 2013). One practitioner interviewee describes DAOs as “internet native communities with a cybernetic aesthetic”. They are geographically distributed local communities, self-selected by interest, versus more traditional ways of organizing by geography, ethnicity, gender, or nationality. DAOs are an evolution of, and reaction to, previous forms of digital communities like Reddit forums or Facebook social media groups. They provide an institutional infrastructure to enact “a governance model sanctioned by software" (Bisq. 2021) and aim to be 'decentralized' from any single point of control or ownership. They also aim to be 'autonomous' in operation, referring to the idea that software code can make a group of people independent from external political or operational direction or coercion.

The concept of a Decentralized Autonomous Organization relates conceptually to the field of cybernetics, that is interested in self-organizing computer-aided systems. The actual phrase "Decentralized Autonomous Organization" was first mentioned by a computer scientist, referencing a "self-defining and self-maintaining system" capable of "evolutionary" processes (Dilger, 1997). This idea was merely in the ether of blockchain communities who, without acknowledgment of prior mention, engaged in a discourse on "Decentralized Autonomous Corporations" (DACs) and Decentralized Organizations (DOs). What was described was a machine organized society, in which DACs provided goods and services and blockchains issues equity shares to distributed owners to operate as transparent, trustworthy, fiduciaries (Larimer, 2013). Co-founder of the Ethereum blockchain Vitalik Buterin then wrote a post exploring how to bootstrap a DAC, and the term "DAO" later appeared in the founding whitepaper of the Ethereum blockchain (Buterin, 2014). From there, the vibrant community of blockchain software developers engaged in experimentation, adoption, and evolution of the concept. DAOs have since expanded to such generality that the term can refer to an investment vehicle, a social club, a service provider, or a combination of all (Brummer & Seira, 2022). In the blockchain literature, DAOs have been defined as "a blockchain-based system that enables people to coordinate and govern themselves mediated by a set of self-executing rules deployed on a public blockchain", and whose governance is distributed among participants (Hassan & De Filippi, 2021). Blockchain technology offers novel infrastructure to coordinate and make agreements, distinct from both traditional contractual and relational governance, as well as governance models present in other digital infrastructures (Lumineau, et. al., 2021). 'Blockchain communities' refers to the distinct values, culture, and infrastructural practices of different blockchain protocols, such as Bitcoin, Ethereum, and PolkaDot.

A central premise of a DAO is that participants in the distributed infrastructure get to govern it. This often occurs through governance "rights", granted via ownership of digital assets in one's digital wallet. In blockchain communities today, a focus on this desire for 'self-governance' stems from the libertarian origins of Bitcoin, as the first fully functional public, decentralized, peer-to-peer cryptocurrency protocol (Nabben, 2022a). Cyberlibertarianism, broadly speaking, is an ideology that advocates that technology, market, and policies should constitute spaces of individual liberty, meaning self-governance (Dahlberg, 2017). A countercultural online sub-group known as "The Cypherpunk's Mailing List" imagined developments in general computing and broad access to public key cryptography fundamentally altering the "nature of government regulation, the ability to tax and control economic interactions, the ability to keep information secret, and will even alter the nature of trust and reputation" (May, 1988). Bitcoin has been labeled by social scientists as a techno-economic imaginary of "infrastructural mutualism", referring to a cooperativist vision of money and society, achieved through "writing [software] code" (Swartz, 2018). The reason why the infrastructural decentralization and self-ownership ideology is gaining momentum now is perhaps related to a zeitgeist of mistrust in the incumbent institutions.

DAOs offer a narrative of democracy done right. DAOs are projected as a digital domain beyond traditional institutional or platform structures that we can 'own', in terms of co-create and cohabitate, instead of it owning us. What this creates is an online agora, whereby the wisdom of the masses mobilizes real-world resources towards their goal. From these intentions emerges domains of complexity around how people can put these ideas into practice to operationalize the ideal of collective autonomy and govern across both online and offline domains. Governance occurs among blended interactions of "on-chain" and "off-chain" activities that shape the boundaries of the organization and allow people to act within it. One example of "on-chain" activity is voting, where only people with the right tokens in the right quantity for that community can vote and responses are recorded on the blockchain. An example of an "off-chain" governance is the person-to-person interactions that occur in direct messages and real-world "meatspace" as an essential part of governance activity, or in some cases, the political backchannelling necessary to get public-facing votes to pass. Due to these combinations of code and people-based interactions, DAOs are a field site for the investigation of the design and social outcomes of automation and governance. Resilience in this setting refers to the human aspects of how and why individuals adopt these organizational structures, against what threats, and if they can use it to adapt, learn, and evolve in adversity (EPIC, 2022).

DAOS & DISTRIBUTED, ORGANIZATIONAL RESILIENCE

Decentralized technologies are an experiment in designing, building, and enacting alternative, participatory forms of organizational infrastructure. The governance challenges facing DAOs are numerous. Like their blockchain-based foundations, DAOs are complex, adaptive, socio-technical systems. To achieve their purpose, DAOs "aim to be governed by democratic or highly participatory processes or algorithms" (Law, 2021). Here, governance is broadly conceived as the "field of action", including the rules and processes for membership, participation, expression of preference, accountability, and recourse (Rennie, et al., 2022). Yet, designing for flexibility in this complex web of social and technical elements and in line with a clear purpose is not an easy task.

The composition and hierarchy of relations between social and technical actors in and between DAOs remain nascent, contested, and evolving. Self-governance is a necessary and often inconvenient by-product of the desire for self-determination. A common discourse in DAO settings is that of "governance automation" and "governance minimization", referring to the reduction of power and reliance on governance wherever possible, by deferring governance to algorithmic processes through automation at the technical layer (BlockScience, 2022). Blockchain proponents have been said to prefer algorithmic authority over traditional forms of institutional authority, meaning the power of algorithms to direct human behaviors (Lustig & Nardi, 2015). Some argue that DAOs should facilitate "automation at the center, humans at the edges", with the "holy grail" being artificially intelligent actors coordinating resources (i.e. internal capital) (Buterin, 2014). Meanwhile, others warn of techno-utopianism in centering the role of algorithmic agents in place of human values and rights (Schneider, 2021; Zook & Blankenship, 2018). The blockchain narrative of the superiority of algorithmic governance and the rhetorical power it holds to attract and retain faithful followers may prove more important than the technological practices of blockchain itself. Claims that blockchain (or any) technology is apolitical, or even can be, are false (Larkin, 2013). Ethnography is of prime importance in this setting due to a cultural bias towards algorithmic governance via automation. This projects the notion that design decisions are objective and code is autonomous once deployed, when in practice, people and social processes are involved in numerous levels of distributed coordination.

As a nascent organizational form, DAOs themselves are interested in developing methodology and practices to enhance resilience in the face of various threats and vulnerabilities. In this setting, ethnographers operate as a qualitative source of feedback for people to understand DAOs, and for DAOs to understand themselves. Anthropological methods have long been utilized as a form of 'observational cognition' in the design of complex computer systems to enhance how a system perceives itself and its circumstances, and thus its ability to adapt and absorb changes to persist (Beer, 1981; Glanville, 2004). This has led us to utilize our ethnographic practices within DAOs to pursue broader studies of organizational resilience and develop a bespoke methodology to do so. Resilience in a DAO ultimately relates to the social purposes or goals of the people choosing to participate in that system (Nabben, 2021a). DAOs are as varied as the heterogeneous groups of people that compose them. Depending on the values of a group of people, the motivation for a DAO can be to make money (known as "DeFi degenerates", which stands for "Decentralized Finance"), to further "regenerative finance" (ReFi) efforts to counteract resource consumption and climate change, or for creative expression such as "Non-Fungible Token" (NFT) artist communities. For a DAO to be considered resilient, its governance must align with the shared purpose of participants of that system (Zargham & Nabben, 2022).

An approach that has developed in our ethnography to analyze DAO resilience is the identification of resilience through identifying vulnerabilities. Vulnerability is a relational notion to resilience, referring to substrates where social or technical components in a complex system may undermine the adaptability and persistence of the system as a whole over time, and in response to threats or changes in context (Healy & Mesman. 2014). By identifying vulnerabilities, they can be addressed through governance, which is acting to steer the system in accordance with agreed purposes and parameters of change in the system. Vulnerabilities in DAOs include social, technical, economic, and legal dynamics challenging DAOs. Vulnerabilities can emerge from outside (exogenous) threats, such as obtaining legal personality from external authorities, or organically from within (endogenous), such as collusion, attack, or lack of engagement by internal members. They can also manifest at or across multiple scales, including the individual (micro), group level dynamics (meso), or broader ecosystem (macro) level (Nabben, 2021b).

Examples of some vulnerabilities emerging in and to DAOs include:

- Social: The challenge of 'doing' governance. DAOs can also be a threat to themselves, for example, establishing and reinforcing power imbalances through protocol design and algorithmic governance. In many cases, software developer ontologies are shaping governance infrastructures, with ideals of "digital democracy" manifesting as paradigms of plutocratic token voting, rather than "inclusion", as well as managing member onboarding, participation, and alignment of purpose as DAOs expand in size of operation or membership.
- Legal: Legal ambiguity surrounding DAOs and the potentially unlimited liability of DAO members, including fears that the U.S. Securities and Exchange Commission (SEC) will classify a token as a security, possibly leading to individual and/or group level liability for penalties associated with contraventions of securities laws (e.g. Uniswap class action (United States District Court, 2022)).
- Technical: Deliberate hacks to attack the system, or people exploiting software bugs that exist nascently without others being aware of it (for example, "The DAO" hack where a line in the software code was exploited and an anonymous party trained millions of dollars in value at the time from the shared treasury, leading to a split (known as a 'fork') in the community and the software code of the underlying infrastructure (DuPont, 2017)).

- Economic: Such as flash crashes, which are short, deliberately coordinated drops in token price. (For example, the MakerDAO flash crashes and attempts to change their pricing oracles in response to maintain a mean price and filter out crashes (Ossthoek, 2021)).
- Environmental: The existential threat of blockchain as a class of technology that produces negative externalities by utilizing computer processing power (along with Machine Learning and Artificial Intelligence).

These prescient social, technical, legal, and environmental dynamics offer a rich field site for ethnographic investigation to identify DAO vulnerabilities.

The following resilience framework was developed as part of our research, which offers a canvassed process to identify and observe vulnerabilities, by which they can then be addressed toward more resilient socio-technical infrastructure (Nabben, 2021a).

Table 1: A model for observing resilience in socio-technical systems.

	ANALYSIS:			
	Purpose / Objective	**Stakeholders**	**Threats**	**Vulnerabilities of each stakeholder/s**
DAO 1				
DAO 2				
DAO 3				

Analysis

Ethnography is necessary for the application of this tool, as it allows for qualitative insights into designer and user aims, ideologies, and politics in their threat perception, that would not otherwise be observable. Threats or crises help reveal infrastructural dynamics, which "become visible upon breakdown" (Star & Ruhleder, 1996). The analysis involves choosing a blockchain project (in this case, a DAO), identifying the objectives and goals of the project, key stakeholders, understanding their threat models or identifying crisis events they have been exposed to, and documenting the vulnerabilities of each sub-set of stakeholders.

ACTION SPACE:								
Micro-level responses to threat			Meso-level responses			Macro-level responses		
(Technical	Social	Economic)	(Technical	Social	Economic)	(Technical	Social	Economic)

Action Space

The action space introduces the processes and practices of "governing" vulnerabilities. Here, multiple scales are identified at which governance actions by stakeholders can be observed. The action space can also be used as a design tool (whereby the ethnographer becomes a participatory stakeholder) to identify where governance, technical, economic, or legal interventions are or could be taking place, by which to reduce or mitigate the vulnerabilities of certain stakeholders against certain threats. Stakeholders then act (or don't, with inaction considered part of the action space), which is observed and documented in outcomes.

ACTIONS & OUTCOMES:		**FEEDBACK LOOPS:**	
Observations of what Actions occurred and why	Observations of what outcomes occurred and analysis in-line with research question	Communication of findings	Iterations: adaptations in response to communication of findings

Actions & Outcomes

Outcomes refer to describing the plans and intents of various actions taken, which are then compared against an analysis of the actual outcomes that occurred. It requires observation of what actions occurred, why, and what the consequences were. This step lends itself to further analysis as to whether the outcomes produced were those expected, or whether unintended or undesired consequences were produced, in relation to the research question or purpose of the system.

This approach aims to produce a methodology for analyzing resilience in decentralized socio-technical infrastructure. These steps of analyzing, synthesizing, and communicating findings provide feedback to the field site, as well as shaping it. They are dynamic in nature, in that they require ongoing analysis, governance, and iterations in socio-technical systems that are constantly adapting and changing. By identifying and observing vulnerabilities it becomes possible to hypothesize and test how they can be "governed" to afford adaptive capacity, toward more resilient digital infrastructure. This resilience methodology is intended for use and design at numerous layers of decentralized systems: from local subsets or components of a DAO (such as a 'sub-DAO') to organizational level dynamics, to the systemic dependencies of DAO ecologies.

ETHNOGRAPHY OF A DAO

Good ethnography "informs, illuminates, and unveils" culture from a member's point of view (Patel, 2015). Emerging technologies often manifest in utopian narratives about technologically driven societal change that will benefit people, markets, and governance (Lanzeni & Pink, 2021). It is less often that they are understood in the experiences of everyday life. Yet, the practice of organizing through emerging technologies like DAOs is configured through everyday activities, routines, processes, environments, and experiences which can be observed through digital ethnographic practices of observation, interview, and participation.

The ethnography of a DAO requires the study of both individual actors, especially software engineers but also product managers, 'meme-mancers', and 'lore masters' who build DAOs culture through shared narratives. (In our study of GitcoinDAO, research data included self-published comic books about "Moloch, the god of coordination failures versus Anon" (Gitcoin Community, n.d.)). Similar to blockchain governance, DAO governance across the multiple categories of DAOs occurs through a combination of social and technical activities, involving 'smart contracts' that automate decisions upon certain conditions, community deliberation, voting, or other methods to signal preference, and accountability mechanisms, including "decentralized courts". While some of these behaviors and interactions occur transparently "on-chain" or on the public blockchain ledger and in formal manifestos, constitutions, terms and conditions, or process 'docs' on GitHub, other dynamics are difficult to observe without insight and participation in online discussion forums (Rennie, et. al., 2022). This requires the ethnographer to become a member of the culture they are researching, demanding full participation and deep entanglement. In a DAO, this means participating in the entire lifecycle of membership, token acquisition, forum discussions, proposals, voting, labor, language, and culture. DAOs are required to capture and maintain this attention of designers, governors, and participants to function.

Due to the decentralized nature of distributed organizations, we found that a constructive starting point in the ethnographic process is to undertake a cartographic mapping exercise to traverse the territory of a distributed, peer-to-peer network. This allowed us to garner understanding about the nature of the broader entity participants are constituting, to make a nascent and dynamic digital organization legible. A map offers a foundation to generate the capacity to understand the what, why, and how of the human experience of DAOs, and also to identify vulnerabilities across various substrates of the DAOs functional and collective purposes. From here, the ethnographer becomes a source of information or feedback to the DAO to surface potential vulnerabilities, as well as uncover the ingenuity of how DAOs create organizational adaptivity and resilience.

Some prescient questions when analyzing a DAO, which will be detailed as follows, include:

- 1. What is being decentralized?
- 2. Who or what is being made autonomous (both functionally and politically), and from whom or what?
- 3. What is being automated?
- 4. What is being organized? (Nabben, 2022b).

What is being decentralized?

Decentralization in crypto communities refers to the physical distribution of the people that operate the computing architecture that runs the network as well as the distribution of political influence over the network from any single point of control (Buterin, 2017). Genuine decentralization also requires that participants in the network are meaningfully empowered in steering the collective (although this is not always the case). Thus, decentralization of blockchain-based protocols is composed of protocol, nodes, ecosystem, and digital tokens (Muzzy & Anderson. n.d.), requiring both technical and social consensus to function. Governance and ownership rights are usually distributed based on capital (plutocracy) or merit (meritocracy), both of which hold pre-eminent value and respect in the space. Interactions between 'nodes' manifest across both digital and physical domains. It is for this reason that the ethnographic field of blockchain communities is described as "multi-sited" and "radically networked" (Rella, 2021). Personal connections contribute to the flow of governance processes across chat applications, forums, Web application voting mechanisms like 'Snapshot', on-chain data from "multi-signature" wallets, and end-user addresses.

Who or what is being made autonomous?

By definition, DAOs include some notion of autonomy, but "what is required for a smart contract to rise to the level of a DAO is not exactly clear" (Wright, S.A. 2021). In practice, autonomy is relative. Ethnographers ask relevant questions here, including how do people think about their own autonomy, both individually and as a group, relative to the autonomy of others and other groups, what does it mean to engage in an autonomous system, and is the system autonomous from its own members? (Cefkin & Stayton, 2017).

Autonomy refers to the emergence of meaning from within a system, comprised of individuals participating in a greater whole (Varela, et. al. 1974). In blockchain communities, DAOs are conceived of as "blockchain-powered organizations that can run on their own without any central authority or management hierarchy" (Wang, et. al., 2019). Autonomy in DAOs refers to political autonomy, meaning individual freedom through self-governance enabled by digital infrastructure and automation that removes the need for trusted third parties in economic and social interactions, as well as functional autonomy, meaning the degree of flexibility an individual or group within an organization to respond to complexity or challenges as they see fit (Swann, 2020). Autonomous parts must make trade-offs to operate in conjunction with other autonomous parts as a collective to function effectively in-line with the intentions of the organization as a whole.

What is being automated?

Participation in a DAO requires engagement in an evolving entity that is comprised of people and automated components. Automated decision-making systems are defined as involving "procedures in which decisions are initially—partially or completely—delegated to another person or corporate entity, who then in turn use automatically executed decision-making models to perform an action" (Algorithm Watch, 2019). Automation in DAOs is concerned with everyday societal structures of resource coordination and organizing, including the automatic execution of transactions according to the rules of the system. On programmable blockchains (such as Ethereum), automation occurs via "smart contracts". Smart contracts are "computer programs stored on the blockchain that allows us to convert traditional contracts into digital parallels" (Szabo, 1994), and fundamental building blocks of blockchain-based applications. Smart contracts are programmed to define rules in advance like a regular contract but are automatically executed via software code when the contract conditions are realized. Claims are made that "there is no need to wait for a human to execute the result" and "smart contracts remove the need for trust" (Ethereum Foundation, 2022). Yet, this is not entirely accurate as humans are needed to set goals, design and write the code, and conduct behaviors that trigger execution of the result.

All algorithms are designed and programmed by directors and software engineers to follow the processes and procedures in pursuit of certain goals (Burrell, 2016). Similarly, smart contracts follow predictable, procedural processes, and are not substitutive for human judgment. In practice, DAOs display varying degrees of decentralization and automation (Tse, 2020). Ethnography is crucial in garnering a clearer sense of the design decisions, implementation, and social implications of these systems. The methodological training in awareness to acknowledge the subjectivity of goals and design decisions as a form of organizational policymaking is referred to in digital domains as "algorithmic policy-making" (Zargham & Nabben, 2020). DAO analysis requires delineating not only what is being automated but how automation processes are determined, by whom, and for what, as part of a broader, structural agenda in directing an infrastructure and its constituents.

What is being organized?

The goal of a DAO and the resources being coordinated by participants can be diverse. The purpose of a system, including a DAO, is not so much in what it claims or aspires to do but in what it does (Beer, 2002). Rather than being a static organization, DAOs are defined by a shared, functional purpose, and can be understood as an ongoing, iterative social process of 'organizing' (Star & Bowker, 2010). The parameters of DAO organizing are often institutionalized in some form of shared statement, whether that be a signed constitution, manifesto, or terms and conditions of engagement (Zargham & Nabben, 2022).

To generate insights into organizational resilience in human-machine systems, we draw on the case study of a blockchain-based Decentralized Autonomous Organization called "GitcoinDAO".

AN ETHNOGRAPHY OF GITCOINDAO

The Discourse forum, Discord, and Twitter channels were heaving. The nervous system of GitcoinDAO, just one particular 'Decentralized Autonomous Organization', stretched throughout the online information flows where community members contributed their attention to participate in forum proposals, governance debates, voting, implementation, and infrastructural maintenance.

GitcoinDAO is a crowdfunding platform with the functional objective of facilitating funding for opensource software projects. What is being decentralized in GitcoinDAO is governance. This guided the operations of the organization to become more decentralized also. What is being organized, or the goals of GitcoinDAO and governance within it, is to fund open-source software. Having followed the project for over 12 months throughout its transition to becoming a DAO, we have witnessed it adapt, evolve, and persist.

The crowdfunding platform project had transitioned to become a DAO by distributing tokens that represented governance rights to their community based on prior use of the platform (in what is known as a 'retroactive airdrop'). When governance was rapidly granted to the community en masse, we needed to acquire governance tokens as researchers to be able to participate beyond the 'token gated' web page of GitcoinDAOs governance platform. One of the affordances of Gitcoin's governance token system allows holders of governance tokens to 'delegate' their voting power to 'stewards' (while retaining control of the token assets themselves). Zargham received tokens due to his previous participation in posting grants for open-source software projects and donating to others on the platform. Mine was much more precarious, reaching out to friends that were involved in the project for research interviews, until eventually, someone responded in a Telegram chat, "Oh, I gotchu girl. Tokens coming your way. What's your address?". I responded, "I was legitimately not expecting that".

A core principle of blockchain communities since Bitcoin as the first public, decentralized blockchain was invented, is encapsulated in the saying "not your keys, not your coins". This refers to the ethos that each person has individual responsibility for owning and operating their own digital infrastructure and assets and they cannot trust anyone else. Yet, my counterparty on an online messaging application had just evolved these rules of interaction, demonstrating their value for collective autonomy – meaning that everyone can be out for themselves, but we are better together if we are going to collectively provision and govern our own infrastructure (which is more typical of the Ethereum blockchain community ethos of "public goods"). Without obstructing my ethics requirements and without having custody of my own tokens, I was in. This is not to say that there were no politics involved in distributing governance tokens, including the core team and Venture Capital investors receiving substantial token allocations relative to initial volunteers in the organization (Nabben & Zargham, 2021). Once governance rights were granted to the community, one of the initial co-founders of the crowdfunding platform posted into the Twittersphere: *"*hello thank you for your inquiry but i no longer know anything about that. please ask the DAO in discord [a Web2 chat app] thx" (Owocki, 2022). By 'exiting to DAO' (Nabben, 2021c), the founders were relinquishing both control and responsibility and ultimately, the fate of the project was down to the community.

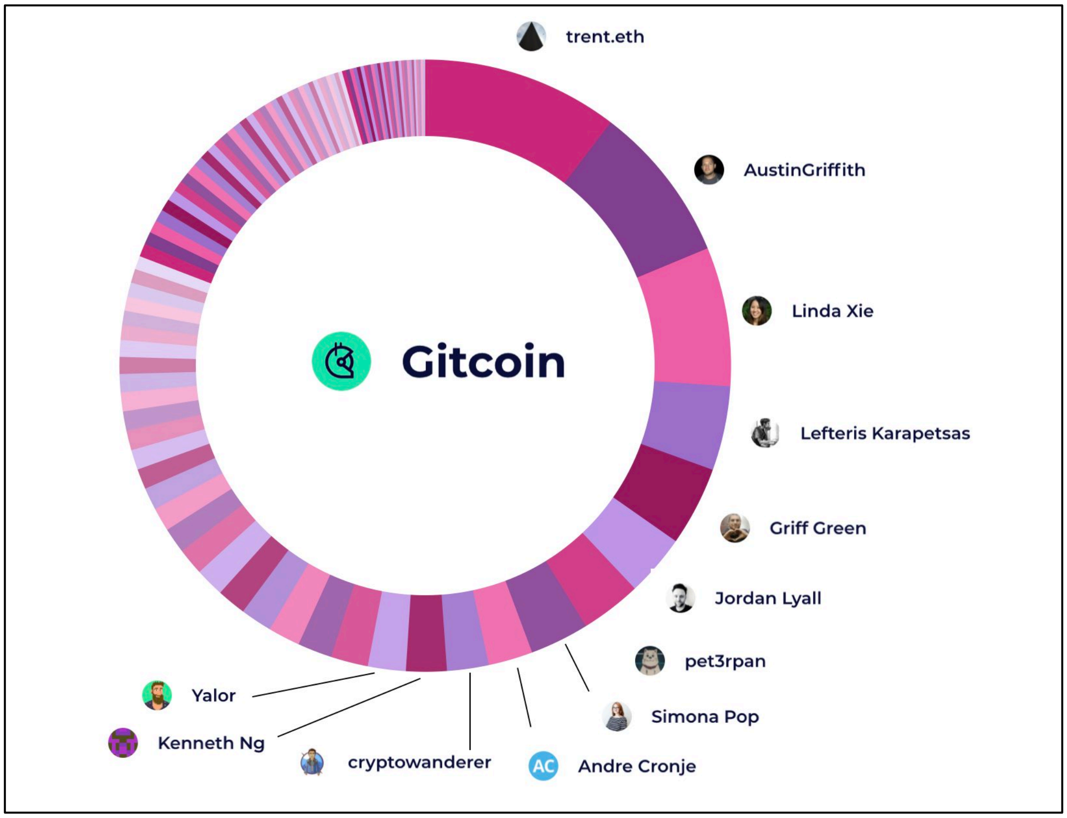

Figure 1. "The first open source congress of Gitcoin" by Alex van de Sande, referred to by Co-founder and former CEO of Gitcoin as "my new bosses" (Owocki, 2021).

Ethnographic research in a DAO commanded entanglement in a number of ways. This includes participating in the design of the system, acquiring governance tokens to see behind the token-gated voting web interface, and posting initial research findings on the forum for other community members to engage with. Access was straightforward in an environment that espouses free and open access to "permissionless" infrastructure (Nabben & Zargham. 2022b). In terms of positionality in relation to the DAO, Zargham's systems engineering firm had been working with the Gitcoin founding team for months to develop processes to protect the platform from "sybil attacks" (when people create multiple, fake identities online or use bots to game the system). I became involved in this process through regular team calls with people participating in DAOs, which are a core DAO ritual where the disparate community shares attention space. In part, our presence as ethnographers doing research on the DAO helped to facilitate ethnographic practices within the DAO, such as encouraging their own reflexivity. For example, one original co-founder of the project found ethnographic insights, such as that 'all infrastructure is political, including this one', illuminating of their frustration that decentralized democracy hadn't just 'worked' (Nabben & Zargham, 2021).

The first vote on the platform for one of the first, big DAO experiments was "Is pineapple a legitimate pizza topping?". 1,134 votes and the verdict were 54.53% in favor of "pineapple for the win". Decentralized governance was going great. In this historical moment of distributed governance rights and prefigurative politics, the light-hearted meme-loving, playful nature of DAO communities shone through. This echoes the cultural expressions of online communities that precede them, including hacker sociality, and Free and Opensource Software (Coleman and Golub, 2008). It was also terrifying. Did they know what they were doing? Can this new community of governors steward the $64 million treasury for a sustainable funding source?

The shared attention of DAO participants is accrued across a range of cultural artifacts. Memes in the form of annotated images that spread virally on Twitter and narrative folklore-style blog posts about how and why the DAO emerged perpetuate tales of "Quadratic lands" and "slaying Moloch" the "god of coordination failure" (Owocki, 2021). Identifying these "master narratives" aids in uncovering the identity, self-perception, and aspirational imaginaries of a DAO (Star & Ruhleder, 1996).

Once of the first steps in employing the resilience framework fields of 'analysis', 'action space', and 'actions and outcomes' was to conduct a mapping exercise of goals, stakeholders, and actions. Digital ethnographic methods, including observation, participation in governance and voting, and interviews with key stakeholders provided us with multiple insights into organizational structure, vulnerabilities, and resilience. By mapping the ecosystem as it emerged, we were able to delineate between the promises and practices of the DAO, to uncover vulnerabilities. The ecosystem mapping exercise was a practice in creating a 'big picture' of what we were observing to establish a shared truth of institutional knowledge and current 'state' of the organization. The map included the technical components, stakeholders, social structures, and political systems. As a map of the social system, rather than the technology, we included the purpose of the system, stakeholders and affordances to various stakeholders and groups, power relations, organizational functions and their relationship to governance functions, and identification and analysis of potential operational and maintenance challenges. It identifies and segregates functional autonomy (as the things that need to get done) and political autonomy (as how internal power structures work to get them done) in relation to the overarching purpose of the organization. What we created was one of the first representations of the multi-million dollar organization.

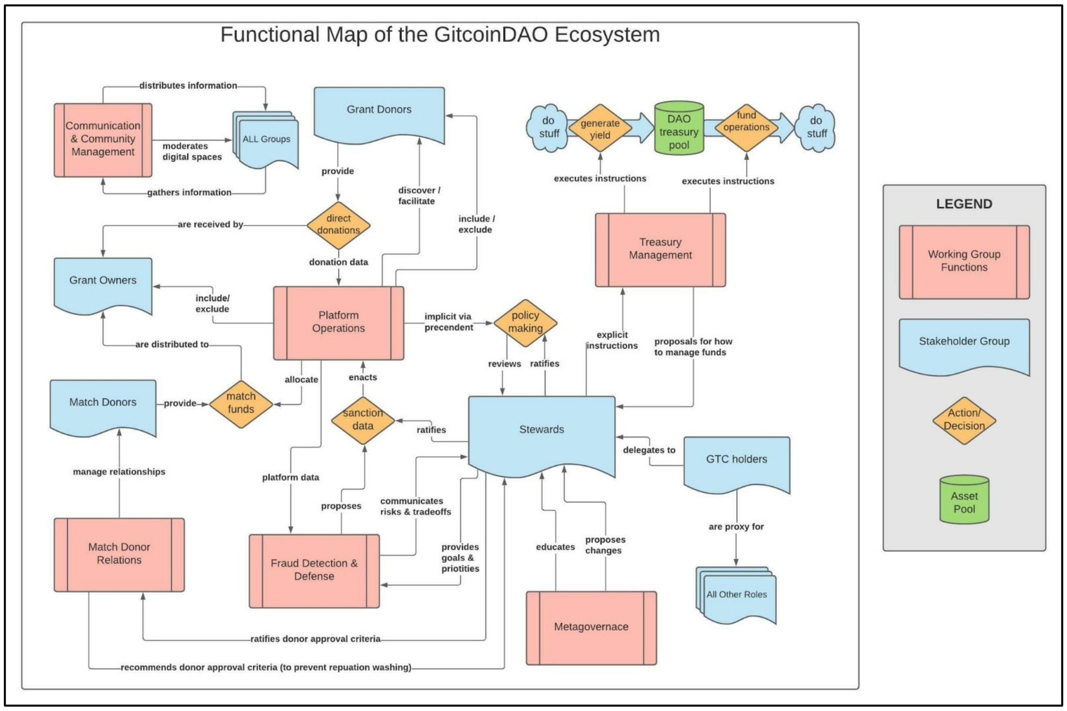
Functional Map of the GitcoinDAO Ecosystem
Communication & Community Management
distributes information
ALL Groups
moderates digital spaces
gathers information
Grant Donors
provide
discover / facilitate
include / exclude
direct donations
are received by
donation data
Grant Owners
include/ exclude
Platform Operations
are distributed to
implicit via precendent
policy making
reviews
ratifies
do stuff
generate yield
DAO treasury pool
fund operations
do stuff
executes instructions
executes instructions
Treasury Management
explicit instructions
proposals for how to manage funds
Match Donors
provide
match funds
allocate
enacts
sanction data
ratifies
Stewards
delegates to
GTC holders
are proxy for
All Other Roles
manage relationships
platform data
proposes
communicates risks & tradeoffs
provides goals & priotities
educates
proposes changes
Match Donor Relations
Fraud Detection & Defense
Metagovernace
ratifies donor approval criteria
recommends donor approval criteria (to prevent repuation washing)
LEGEND
Working Group Functions
Stakeholder Group
Action/ Decision
Asset Pool

Figure 2: Functional Mapping of GitcoinDAO Ecosystem (Zargham, 2021).

From the basis of the DAO map, we were able to observe the action space, and outcomes of how the DAO adapted to the massive transformation in governance structure. By visualizing the DAO, the map helps to position the ephemerality of a DAO in time and space. As it is updated over time, the map demonstrates how DAOs adapt and evolve their governance processes, labor and accountability structures, technical mechanisms, and culture to manage risk and mitigate threats in novel ways that enhance organizational resilience. The adaptations that we identified could only be garnered through ethnographic observation and participation in the DAO. Our findings became feedback loops to the DAO, as we wrote and communicated them back to the community.

DISCUSSION & FINDINGS

Organizational adaptations in the DAO occurred structurally, socially, and technically to govern vulnerabilities. Typically, socio-technical systems are difficult to analyze as most administrative interactions occur not through computational processes but via out-of-band interactions (Singh, 2014). Through ethnographic techniques, we were able to observe the human-machine dynamics as well as "off-chain" interactions and social dynamics of a decentralized organizational infrastructure as it adapted.

The vulnerability and resilience mapping exercise also enabled us to identify a number of areas of GitcoinDAO that weren't adapting to the organizational transformation from project to DAO. What we found is significant threats arise from internal vulnerabilities in

GitcoinDAO, rather than from external threats. Figuring out how to structure and operate a decentralized organization created significant challenges to the overall stability and functionality of the community. For example, governance did not occur in a strictly non-hierarchical, peer-to-peer manner. The separation of governance and labor classes in the governance token distribution mechanism was grounds for a rocky beginning. Governors held incredible power and prowess in their new-found roles, whilst no policies or systems were in place to track and reward labor contributions in the day-to-day functioning of the DAO. This is against the democratic principles of organizing espoused by cooperative organizations, where laborers are owners in the organization that they are contributing, which aligns incentives and maintains engagement. Policies to address this issue evolved in real-time, including through community forum posts to 'open-source' our research for community feedback and input (Nabben, 2021).

Identifying vulnerabilities produced opportunities to adapt and address them towards greater resilience. Through the communication of our insights, we were able to contribute to real-time community forums on these matters. GitcoinDAO employed a number of novel techniques to address this threat, for example, iterating on the structure of the organization. This included rapidly self-organizing into "sub-DAOs" that reported to the governors of the overall DAO. Drawing on the principle of subsidiarity (that decision-making rights each be assigned to the lowest level of a governance arrangement at which they can be exercised competently) to replicate bottom-up governance strategies evident in commons research nested ecosystems (Ostrom, 2015; Marshall, 2007), each sub-DAO had its own distinct, functional purpose, whether this be "fraud detection and defense", "memes, merch, and marketing", or "DAO operations". This designated political autonomy and strategic autonomy to the DAO governors but functional and operational autonomy to the laborers in each sub-DAO for greater organizational adaptivity and scalability. It also introduced administrative overhauls regarding budget requests and accountability on spending.

In practice, governance occurred in disparate attention cycles across janky compilations of Web2.0 and Web3.0 tools and applications. The patchwork of decentralized governance spans Discord, to Discourse forums, to Snapshot (a "decentralized application" for voting), to smart contract addresses that hold the treasury, to "multi-signature" wallets, which require a small handful of parties to manually sign off transactions to move cryptocurrency to its democratically allocated destination, and back to Discord. Administration of the system by stakeholders proved far less automated in practice than the visions projected by this DAO and others of collective autonomy via automation (in this particular DAO, although they are currently creating proposals to "automate Gitcoin grants").

Instead, automation was leveraged in subtle ways in specific areas to augment human capacities and enhance organizational resilience. An algorithmic machine learning (ML) process was rapidly developed and deployed 'in flight' during a granting round to flag sybil attacks (multiple, fake online identities that game the funding system) (Emmett, et. al., 2021). Sybils are a major threat to the DAO because false identities unfairly giving or winning matched donation funds undermines the legitimacy of the entire granting process and purpose of the system. Initially, the ML pipeline was overseen by the engineering team of (co-author) Michael Zargham, before gradually being handed over to the "Fraud Detection and Defence" working group to iterate and maintain the process. Algorithmic processes were meticulously contextualized into an "algorithmic policy", which dictated the role of people and the role of algorithms to operate the procedures in line with the terms and conditions of the platform (Zargham & Nabben, 2020). What resulted is computer-*aided* governance – where algorithmic processes augmented human goals, and people and machines worked in synchronization with one-another to defend against sybil attackers.

In general, the mapping exercise served in the generation and establishment of institutional knowledge for the community. While there are terms and conditions from the initial Gitcoin platform that govern some behavioral norms in the community, there is no shared, established constitution or manifesto (as in many other DAOs) to provide a fundamental axiom of the world that the community agrees on. This negatively impacts attention cost, as high-quality contributors don't have clear avenues to access or navigate the community to contribute in a decentralized manner. Institutional knowledge also creates the grounds for effectiveness, such as clear boundaries around how shared resources can be allocated, rather than political infighting over core operational matters.

Although we were able to map organizational vulnerabilities and techniques for resilience, it proved difficult to capture and hold the attention of the DAO to communicate our findings in meaningful and effective ways. Posting the map on the 'Discourse' forum elicited positive and enthusiastic responses from some community members, including 11 love heart emojis, and comments such as, "This is really helpful", "Thanks!", and "See the ecology is strong, it is a continuous development" (Zargham, 2021). Yet, there was relatively little engagement in the ideas presented amidst the swatch of other information on forum proposals, votes, and grants. The impact of our ability to provide feedback to the DAO was varied, with some design suggestions becoming seminal to the resilience of the organization itself, and some failing to attract and hold the attention of the dispersed monolith. In part, the lack of engagement in the initial take of qualitative research on the DAO makes sense, given the cultural bias for actions (or "BUIDL"ing – meaning to build software), rather than reflexivity and deep cognition about the strategic implications for the organization.

CONCLUSION

DAOs are a cutting-edge digital domain and unique field site for ethnographic practices to learn about resilience in socio-technical settings. The ethnography of a DAO commands the development and application of foundational ethnographic tools as well as novel methodologies to elucidate insights in complex, socio-technical domains. 'Resilience ethnography' in DAOs includes the resilience framework to identify what to look for and the mapping exercise to identify vulnerabilities. Mapping the technical and social components of a decentralized organization enabled us to identify innovative approaches emerging within a DAO to adapt to changing circumstances, as well as emergent vulnerabilities. What surprised us was the identification of meaningful strategies already being taken by a DAO to generate organizational resilience, that may translate to other domains. Our practice demonstrates how ethnographic practices remain relevant more broadly for the design and maintenance of resilient technological futures by injecting qualitative insights into digital domains.

Ethnography in the domain of socio-technical systems helps to "re-humanize automation" by accounting for how humans are involved at every stage of the design, development, implementation, and maintenance of digital infrastructure (Pink, et. al., 2022). In practice, ethnography de-mystifies algorithmic systems, to make something like a DAO an observable unit of study and participation. In blockchain-based organizational infrastructure, ethnography reveals where governance is occurring and where automation is not occurring in critical, organizational processes that generate adaptivity and change. The study of DAOs provides a reference point to broader inquiries into where, why, and how people use automation in social institutions, how this may be navigated effectively, and the social context, benefits, and drawbacks that these processes and techniques afford. Although helpful, algorithms can only tell us what they are programmed to tell us and do not substitute for direct human involvement or feedback in decentralized organizing.

The ethnography of DAOs foregrounds not just technical but social, human dynamics of these assemblages. Ethnographic contributions to DAOs illuminate the adaptive components of these organizations by tracing the materialities of not just code and hardware but people, motivations, processes, relations, and politics. Automated Decision-Making systems, technologies, and devices do not and cannot exist independently from human thought, embodiment, and action. They are inextricably linked to humans and entangled within social relationships, cultural contexts, and human-made organizations and infrastructures (Lupton, 2019).

This piece demonstrates the value of ethnographic techniques in the anthropology of information systems as emerging domains of decentralized social institutions, algorithmic governance, and automation. This contribution shows how ethnographers can approach and gain access to decentralized organizations as a field site, and what value they can contribute to these communities. These techniques and practices are also applicable to the study of social dynamics in other sociotechnical infrastructures to learn how they adapt, or where and why they fail to.

This essay also highlights a possible direction for further research into how system designers and participants can be more reflective of decentralization, autonomy, and automation in their own organizations. The remaining hard questions include how to explain or transfer ethnographic practices and insights into a decentralized organization (such as reflexivity in relation to one's field, research, decisions, and ethical obligations to the people affected by one's work), how to better incorporate ethnographic insights into DAO design and practice given the time and attention it takes to communicate emerging results of ethnographic practice to design engineers, and how to measure the impact of ethnography on a DAO.

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NOTES

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“Buy now, pay later” as Resilient Credit

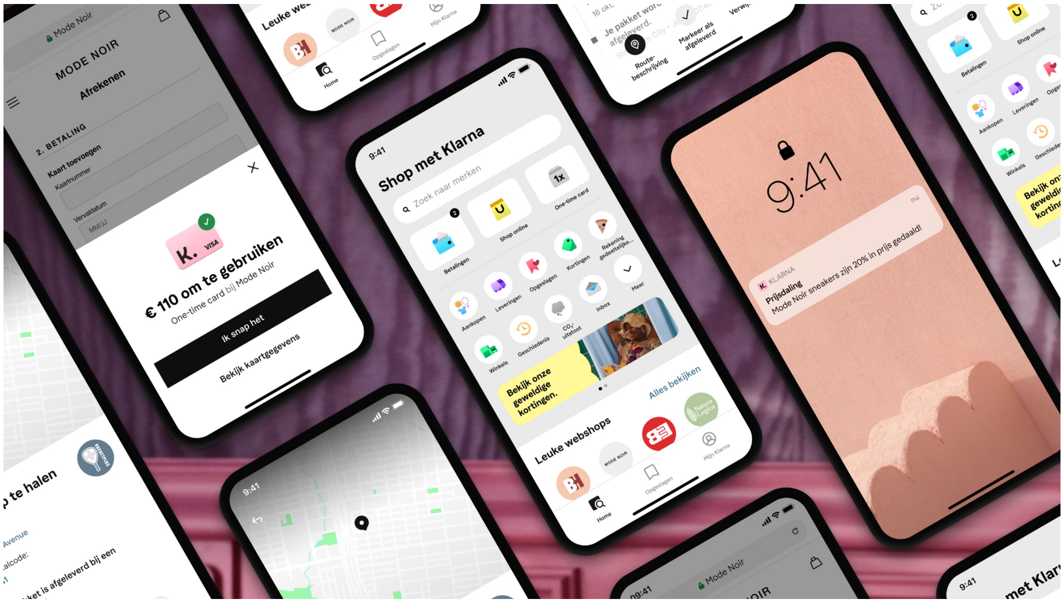
RACHEL AALDERS, *Australian National University*

Buy now, pay later (BNPL) products like Afterpay and Klarna promise to disrupt and democratise traditional finance by providing a fairer and more empowering financial product. Yet critics argue these products encourage overconsumption that people can ill-afford, with late fees that can quickly add up.

But what if we viewed these products not as emerging and disrupting, or as predatory and targeted, but instead saw them as part of a resilient credit industry – one that has learnt, adapted and evolved with changes in norms, regulations and technology?

Understanding these products as part of an ongoing, resilient credit industry helps us move beyond criticism and hype, so we can design a financial future for everyone.

Keywords: fintech, design, debt, consumption


MODE NOIR
Afrekenen
2. BETALING
Kaart toevoegen
€ 110 om te gebruiken
One-time card bij Mode Noir
Ik snap het
Bekijk kaartgegevens
Shop met Klarna
Zoek naar merken
Betalingen
Shop online
One-time card
Aankopen
Leveringen
Opgeslagen
Kortingen
Winkels
Geschiedenis
Inbox
Meer
Bekijk onze geweldige kortingen.
Leuke webshops
Alles bekijken
Home
Mijn Klarna
9:41
KLARNA
Prijsdaling
Mode Noir sneakers zijn 20% in prijs gedaald!
te halen

Klarna BNPL app. Credit: Klarna

Rachel Aalders is a PhD candidate in sociology at the Australian National University, where she researches the political and ethical design of fintech. Before her PhD, Rachel managed a range of national data collections at the Australian Institute of Health and Welfare. She has undergraduate degrees in anthropology and psychology, a masters in health and international development, and a masters in applied cybernetics. rachel.aalders@anu.edu.au

Show Must Go On

How Can Ballet Help Us Strengthen Ethnographic Practice?

ALMINA KARYA ODABASI, *Vrije Universiteit Amsterdam*

This PechaKucha is drawn from research conducted as an organizational ethnography at The Dutch National Ballet (DNB), a renowned professional organization in the culture and arts sector in the Netherlands. However, just like most research trajectories, mine was also full of hurdles that I needed to overcome, the biggest being Coronavirus and the disruptions it created. While constantly adapting myself and my research to the circumstances of the day, I agree with Marcus and Fischer's description of ethnography being a "messy, qualitative experience" (1986, p.22). I have come to recognize how resilience is very much engraved in the ballet as a profession with opportunities to observe its manifestation even before (or during) adversities; and its learnings can be useful for other (cultural) settings and/or disciplines. In this PechaKucha, by proposing a new perspective to understand ethnographic practice, I suggest that what we learn from ballet can impact the resilience of researchers and the trajectories we take.

Keywords: ethnographic practice, embodiment, mind-body coordination, corporeality

Photographed by the presenter.

Almina Karya Odabasi is a Teaching and Research Assistant at Vrije Universiteit Amsterdam, currently working on embodiment and identity building. This interest is fueled by her dance background as a licensed sportsperson. She is also involved in designing teaching innovations and learning activation initiatives. She has undergraduate degrees in international relations and business administration, and a master's in cultural management. She previously has worked in creative industries, also in different companies' brand partnerships, public relations, and project management departments. Contact: a.k.odabasi@vu.nl

PAPER & PECHAKUCHA SESSION

Creating More Resilient Futures

These presentations address resilience in method and practice, when confronted with uncertain and adverse situations. When and how does agency, self-awareness, creativity and the imagination become fundamental to the work we do? How do we make the very methods we use resilient when our subjects are uncertain? What stake do these approaches have in making futures for our subjects and for our very practice?

Curators: Hilja Aunela (*Noren*) and Rogério Lourenço (*Cross Project Resources*)

Rehearsing Imagined Futures

Creative Performance as a Resilient Process Among Refugees

NICOLE ALEONG, *University of Amsterdam*

Cultivating resilience while navigating uncertainty is crucial for refugees. In the Netherlands, after receiving asylum and the right to work, refugees are often urged to adapt or evolve in hopes of successfully integrating into the Dutch economy. How do forced migrants who pursue work in creative enterprises help us rethink the relationship between forging new lives and uncertain futures? In this paper, resiliency of refugees is presented as a process of creative performance and experimentation. Efforts taken by refugees to explore, or 'self-potentialize', new future creative pathways suggest that resilience is overly simplified when defined as a pursuit of resistance to integrate and conform into established creative industries. The stories of two refugees living in Amsterdam showcase how resiliency is future-oriented, processual (Pink & Seale 2017), and connected to the preservation of one's 'capacity to aspire' (Appadurai 2013). 'Future-making' is embedded into their creative pursuits and weaved into their ongoing journeys of personal and professional development. Ethnographic inquiry into the perspective of refugees pursuing work in the creative economy sheds light on the complexities and nuances of rehearsing alternative imagined futures.

Keywords: imagined futures; uncertainty; refugees; creative performance; capacity to aspire

INTRODUCTION

In 2022, the future of refugees has once again become an urgent topic of global concern. Ongoing danger due to either war, violence, or risk of persecution threatens the lives of millions forcing them to seek shelter and safety across international borders. The Russian invasion of Ukraine led to 2.5 million residents fleeing the country to neighbouring European states and other parts of the world within a span of two weeks. The situation in Ukraine was described as "the fastest growing refugee crisis in Europe since World War II" (@FilippoGrandi, UN Refugee Agency Commissioner, Twitter, March 16, 2022), heightening the significance and visibility of forcibly displaced people around the world. The plight of (non-Ukrainian) refugees' migratory experiences has been a longstanding topic of academic research, while often positioning these displaced populations as the subject of case studies regarding severe mental health concerns, medicalized trauma, economic development, and the reverberations of crisis. Yet, in a conceivably 'post-covid-19 pandemic' world, where corporations, organizations, and governments worldwide are aiming to relieve strategic indecision and illuminate paths forward, ethnographic inquiry into forced migrants' perspectives sheds light on the complexities and nuances of imagining unknown futures. Those living with deep uncertainty in their daily lives, such as refugees, offer a route for ethnographers to view resilience as a mindset to anticipate and speculate the future.

In the Netherlands, asylum-seekers (those awaiting legal-status decisions) often endure an unpredictable amount of time to receive their residence permits and complete the asylum-seeking procedure. For many readers, this trying procedure alone might qualify asylum-seekers as suitable candidates to teach on the topic of resilience based on their ostensible ability to sustain and recover from unprecedented change (Balfour *et al* 2015). Even after receiving asylum and the right to work (referred to as 'refugees' in the Netherlands once legal status is obtained), refugees are urged to adapt or evolve in hopes of successfully integrating into the Dutch economy; either by means of heavily marketing their previous experience or upgrading their skills. Those who intend to integrate into specific industries, like the creative industries, are often met with resistance, financial pressure, and a

2022 EPIC Proceedings pp. 101–116, ISSN 1559-8918, https://www.epicpeople.org/epic

lack of encouragement from government services aimed at assisting employment seekers. Due to these circumstances, the vocational aspirations of refugees are often given minor consideration relative to their legal status, safety, and general social welfare. Vocational aspirations can, however, offer an entry point to examine where and how refugees realize and actualize their desires for previously unimaginable (or possibly unattainable) futures prior to their forced migration.

Across the community of practicing ethnographers and social scientists in industry, policy, and academia, there are multiple definitions of resilience. In one extreme, resilience has been defined as one's ability to "experience severe trauma or neglect without a collapse of psychologic functioning or evidence of post-traumatic stress disorder" (Alayarian 2007, 1). The word 'without' in this definition is interpreted to emphasize the ability to endure and withstand. Within the EPIC community, resilience has been referred to as "the ability to learn, adapt and evolve in the face of adversity or changing conditions"[1] – interpreted as a form of recovery, or even resistance. Resilience is often projected onto refugees, as a category of people who have typically undergone trauma, violence, and intense disruption in their lives. This viewpoint can be extended further to describe how their vocational aspirations and employment pursuits are typically seen from an etic (or "outsider's") perspective. Meaning that, because refugees in the Netherlands face discrimination, racism, and xenophobia – which positions them in economically disadvantaged positions and detracts them from finding employment opportunities (Van Tubergen 2006) – they are also likely to being viewed as "resilient". However, what if resilience was thought of as something beyond one's endurance, recovery, or pursuit of resistance? In this paper, I present the resiliency of forced migrants as a process of performance and experimentation, rather than a method of resistance against pre-defined integration processes and societal conformity.

Based on original ethnographic research conducted alongside predominantly Western Asian/Middle Eastern displaced migrants, this paper showcases how resiliency is future-oriented, processual (Pink & Seale 2017), and connected to the strengthening of one's '*capacity to aspire*' (Appadurai 2013). Two selected refugees' stories highlight how creative performances are foundational forms of self-expression that allow experimentation with alternative futures that can be rehearsed and practiced. I argue that processual acts of '*future-making*' are embedded into refugees' creative pursuits and weaved into their ongoing personal and professional development oriented towards employment in the Dutch creative industries. This paper offers a partial answer to a larger ethnographic question, asking: how do forced migrants use creativity to intertwine self-expression and employment as a means of '*future making*' while navigating uncertainty brought on by their precarious legal status in the Netherlands? In other words, how do forced migrants who pursue work in creative enterprises help us rethink the relationship between forging new lives and uncertain futures? Ethnographic inquiry into the economic integration journey of refugees pursuing work in the creative economy in the Netherlands offers a unique lens to understand the intricacies of navigating uncertainty and explore the process of imagining alternative and unknown futures once asylum has been granted.

Furthermore, this paper is a direct response to Panthea Lee's EPIC 2021 Conference keynote presentation which challenged how ethnographers engage with their respective corporate stakeholders to speculate and imagine the future. In her talk titled "*Exiting the Road to Hell: How We Reclaim Agency & Responsibility in Our Fights for Justice*", Lee suggested that ethnographers must include the perspective of artists, makers, and creators into the folds of ethnographic research "to amplify the voices of those who possess moral clarity and courage" and "radical imaginations" to ensure that the next version of reality – our collective future – is indeed different than the version in which we are living in now (Lee 2021). While it is debatable who is in possession of "moral clarity", Lee's categorical description of who these creative practitioners are is clear and was intentionally considered during the design of this research. Through the analysis of creative practices, this paper argues that pockets of refugees in the Netherlands are indeed finding their "voice" to express their radical imaginations of the future (Hirschman 1970, in Appadurai 2013). An ethnography of forced migrants' visions and plans for the future of creative work offers insight into how we might learn, adapt, and grow roots of resilience amidst periods of unpredictable change.

METHODS

The contents of this paper are based on original ethnographic data collected between January and April 2022 in Amsterdam, The Netherlands. This research was conducted in partnership with Makers Unite, a Dutch social enterprise that formerly ran the Makers Unite Creative Lab (MUCL), a six-week professional development course aimed at self-identifying "creative newcomers". "Newcomers" is intended to be an all-encompassing term used in the Netherlands to capture migrants such as asylum-seekers, refugees, expatriates, or immigrants. By being self-identifying "creatives", research participants either obtained previous work experience in a creative industry prior to seeking asylum in the Netherlands, were developing a portfolio in a desirable creative field, and/or demonstrated aspirations to work in the Dutch creative industries. Interlocutors were primarily past MUCL participants, or "alumni", whom I contacted directly to receive informed consent for their research participation with the assistance of Makers Unite staff. I met many interlocutors online for semi-structured Zoom interviews, which, for some, eventually turned into recurring, unstructured, and casual in-person meetings.

I would connect with my interlocutors primarily via WhatsApp or Instagram before meeting them in-person, again either at their home or accommodation. My analysis heavily explores the discussion and observations made during these in-person meetings; however, Instagram allowed me to keep casual weekly tabs on the whereabouts of my interlocutors and respond to their Instagram stories in real time to get to know them outside of a formal interview setting. Online social media served as an appealing platform to connect with interlocutors because I could witness their daily lives, observe creative practices exhibited online, and access otherwise unobtainable visual content.

In total, I interviewed sixteen research participants and engaged with several more MUCL participants in a casual nature through the Makers Unite Mighty Networks online platform, in-person community events, or during my participant-observation of the 20th iteration of the MUCL program – all of whom informed my findings. The two individual's stories featured in this paper have been selected for their ethnographic and contextual richness and similarities in showcasing creative performance as a method of processual future-making. The themes presented in this paper are reflected in other examples emerging from this body of research, which are only unable to be included here due to length.

THE CAPACITY TO ASPIRE AND 'ROOTS' OF RESILIENCE

Conversations related to envisioning and conceptualizing 'the future' tend to lead into dialogues around hopes and aspirations. Renowned anthropologist Arjun Appadurai introduced the idea of a '*capacity to aspire*' as a navigational, social, and collective capacity that captures the ability to engage with individual wishes and wants (Appadurai 2004; 2013, 188). By arguing that there is a need to examine how the poor or other marginalized groups seek to express their aspirations, Appadurai calls for the further development of an anthropology *of* the future (Appadurai 2013). In a former EPIC paper inspired by Appadurai's writing, Mohanty and Saksena argued that the '*capacity to aspire*' and '*future-making*' are both culturally dependent and that to investigate and design for possible futures, ethnographers and designers must foreground emic perspectives in hopes of drawing attention to the 'cultural map of aspirations' of their research participants (Appadurai 2004, 59-84, cited in Mohanty & Saksena 2021). This paper continues to build upon Appadurai's '*capacity to aspire*' but centres his application of Hirschman's theory of "voice" (1970), which calls for greater opportunities for the poor – along with other marginalized groups – to debate, contest, and oppose as a method of democratic participation in the design of new social systems in established society (Appadurai 2013). This opens a discussion ripe for further commentary on how the '*capacity to aspire'* is practically observed (and strengthened) among a vulnerable population to access dialogues entrenched in various conceptualizations of the future. As ethnographers, how do we listen to the "voice" of historically marginalized groups to understand not just the aspects where change is sought, but areas where (underrepresented) internalized desires can take root to flourish and grow? In this research context, Hirschman's concept of "voice" is operationalized and observed among research participants as vocalizations via oral communication, body language, and written texts (Hirschman 1970, in Appadurai 2013).

Over the past decade, creativity and art-based practices have been linked to the migratory experiences of refugees to foreground themes of political status, recognition, and belonging (see Rotas 2004; Hajdukowsk-Ahmed 2012; McRobbie 2016; Damery & Mescoli 2019). In hopes of building off of this literature further, I present a case that refugees in the Netherlands use opportunities of creative expression to build individual and collective resilience through theatrical performance and art exhibition. Refugees are observed to exercise their '*capacity to aspire*' in the Netherlands by utilizing both new and familiar forms of creative self-expression as a means of experimenting – or rather *playing* – with imagined alternative future scenarios and their own vocational identities. By engaging with live performance in local drama troupes and theatre companies, these refugees involved:

> Seek to strengthen their voices as a cultural capacity, [where] they will need to find those levers of metaphor, rhetoric, organization, and public performance that will work best in their cultural worlds. And when they do…they change the terms of recognition, indeed the cultural framework itself. (Appadurai 2013, 187)

As Appadurai explains, the '*capacity to aspire'* has much to do with finding a localized method to negotiate the 'terms of recognition' that are applied to their social status. Refugees in the Dutch context demonstrate a willingness to engage with performance that will grab the attention of public audiences to debate and contest their (lower) status as perceived unwanted migrants seeking legal permits to permanently reside within the Netherlands.

By approaching this research from a bottom-up perspective of refugees, I intentionally reframe and centre uncertainty as a departure point to imagine and intervene with other possible futures. This is inspired by the work of Akama, Pink and Sumartojo (2018) who explore uncertainty as a process of disruption that enables new foundational knowledge to be gleaned from future-making possibilities. Therefore, uncertainty is not seen as a by-product or symptom of dealing with precarious circumstances. Instead, it is repositioned as a starting point to accept and normalize the very fact that immediate expectations for near and distant futures and anticipatory events are and will proceed to be subject to change.

If aspirations involve a change of state, linking resilience to change challenges its connection to a pursuit of resistance. I borrow Pink and Seale (2017)'s description of resilience, originally applied to the analysis of the Slow City movement in Australia. According to Pink and Seale, "we can understand being resilient as part of a process of weaving one's way through the world, and thus as pertaining to alternative ways of living that are adaptive and relational rather than resistant to others" (2017, 191). In this manner, resilience is shown to be a future-oriented mindset, adopted in and for scenarios where the objective is to generate change. Thus, I argue that refugees engaging with creative practices are 'growing roots' as a form of resilience in their new environment. Resiliency is viewed not as resistance towards a confronting barrier, but as a form of exploration to grow "roots" (Pink & Seale 2017) and continue processes, or act on desires, that are already in existence. This method of resiliency affirms the belief that creative pursuits and aspirations need not end in the face of being forcibly relocated. Rather, like a plant being re-potted into new soil, refugees' creative practices can take hold in new environment, a new country, and delve into new digressions linked to the future.

FINDING ONE'S VOICE

Next, I present two ethnographic examples of refugees living in Amsterdam involved in creative performance engagements. These examples are drawn from a group of refugees loosely connected to each other by association with Makers Unite, and their past participation in the Makers Unite Creative Lab. Both refugees were involved with two distinct creative production companies in Amsterdam. Note that names have been changed to protect the privacy and safety of the research participants.

Rehearsing alternative futures: Alek

I met Alek at the closing "Pitch Night" event of MUCL 18 in October 2021 when participants are recognized as graduates and welcomed into the MUCL alumni community. As we sat down during the program intermission to eat and chat, Alek told me that he dropped out of the program because he was too busy volunteering and rehearsing for the play that he was in. After moving from Russia and relocating a couple of times, Alek came to the Netherlands in 2019 to live safely with his boyfriend in a country where they could easily marry. He had worked as a fashion designer in Russia, then a fashion design teacher in China and the Philippines, and now Alek found himself working in an Italian home furnishing retail show room as the store manager. Albeit a change from his well-established professional experience in the fashion world, Alek was happy to have a stable and steady job as he dabbled with new experiences while setting up his life in Amsterdam.

Between January and March 2022, I met Alek on and off at the store where we would share a coffee and sit among the stylish home décor as if it were a proper living room to lounge. Alek and I easily discussed the reasons for wanting to get out of the fashion industry: him citing poor mental health, environmental degradation, and sustainability as driving factors. Above all, he maintained an attitude of wanting to try everything – particularly new hobbies that might lead to a career change. He joined a theatre group specifically seeking refugees to be part of the cast ensemble. Alek was one of the many refugees cast in the ensemble of *Wat We Doen's* performance of "Hoe Ik Talent Voor Het Leven", a Dutch stage play based on the eponymous novel by Iraqi author Rodaan Al Galidi. The play tells the story of an asylum-seeker who lived for nine years in a Dutch asylum-seeking camp (in

Dutch known as an "AZC"). Alek joined the cast in fall 2021 when the theatre production was resuming after months on pause due to the coronavirus pandemic. He admitted that working at the store was enough for now, but the theatre production had "injected him" and now he was addicted. He adored it all: the exposure, the spotlight, the feeling of freedom on stage. Even though he was an unnamed character up until the very end of the play. Even though he was a member of the ensemble cast that mostly operated as a singular fluid body. On stage, he transformed into a different version of himself.

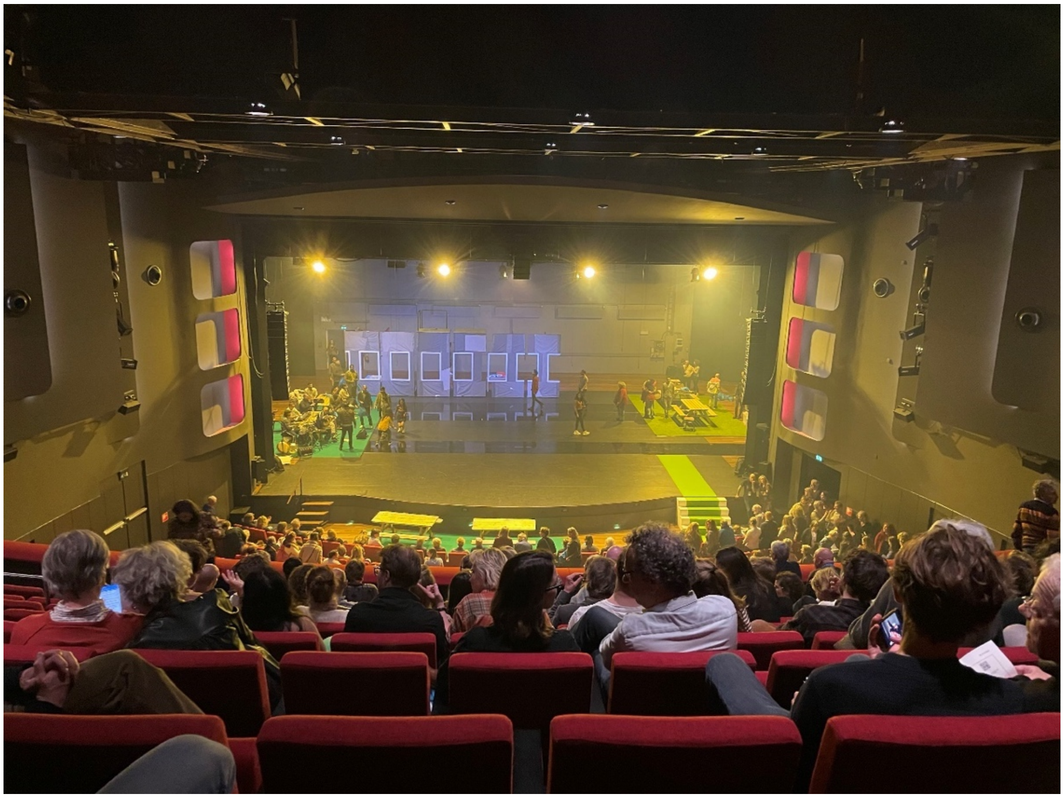


Figure 1. Stage of Wat We Doen's performance of "*Hoe Ik Talent Voor Het Leven*" at Stadsschouwburg Utrecht (Municipal Theatre Utrecht) on 18 March 2022. Photograph by author.

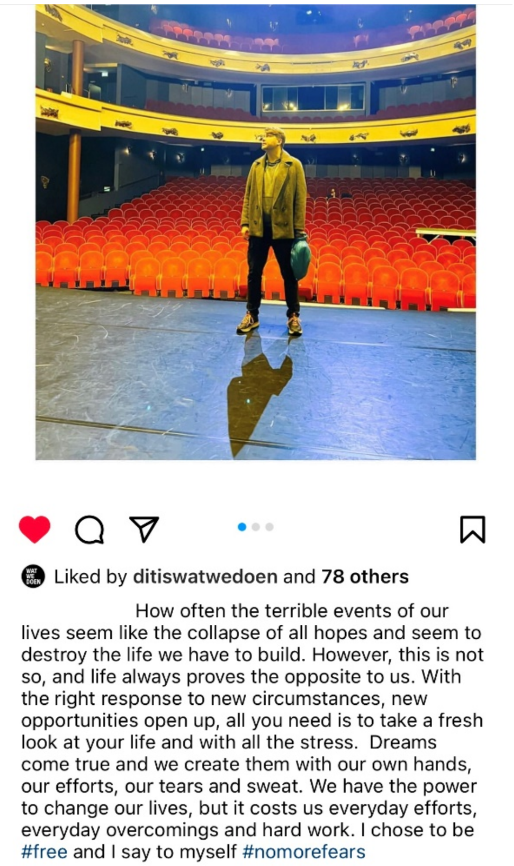
I attended the play in mid-March with a friend to witness Alek perform live. What became clear to me during the production was the way that the performance simultaneously explored and exploited the emotions in the original timespace of living in an AZC on stage to access visions of a redesigned asylum-seeking process. The play's plot confronts the audience with the presumed realities of the dehumanizing hardships and challenges that asylum-seekers face in the Netherlands. Characters legal residence papers are denied, a child born in the AZC celebrates multiple birthdays to signal the passage of time, racist and xenophobic remarks are made by fictitious Dutch government workers. Although the performance was by no means improvised and the actors were following a pre-destined script, the nature of each performance was that no two nights were ever the same. During a meeting, Alek described the experience being particularly emotional due to the nature of rehearsing, and therefore reliving, parts of his trauma:

> Of course, our emotions is [*sic*] important. What we're doing on stage. The concentration – it's everything. And you – you're reliving it together, again, and again. This is also… Because before you don't understand how the actor can cry, again and again, on the same thing. But it's possible… Every time it's different. Because it very depends on the group. (Field notes)

The act of rehearsing and performing multiple times suggested that Alek, along with his fellow castmates, were in a mode of constant tweaking and practice with the intention of performing in a certain way in the future. I argue that rehearsal divides this creative engagement into a series of steps, where each practice is part of the journey, or process, of preparing for the play. Being part of the play is *processual.* One cannot jump to the final show without rehearsing the movements, actions, hand gestures, dance sequences, even if certain segments will be improvised in the moment.

Despite the intense emotion delivered with each performance, in our chats together, Alek described how enjoyable this experience was for him. He embodied, really taking to heart, the uncertainty that comes with his migratory experience to empower himself to continue discovering what he wants to do in terms of work and where he wants to spend his energy. While critics might claim that it was chance that Alek found a production troupe looking for refugees to provide a genuine and authentic experience to the play's topical subject matter, Alek persisted that this valuable opportunity opened up a new avenue for him to explore a vocational aspiration as an actor. Alek affirmed that this performance group allowed him to try a new creative practice and strengthen his bonds with the refugee community in the Netherlands. He was inspired by being on stage and the attention he has received from performing. He was even featured in the media as a 'poster boy' for what the refugee experience "could" be like.

Alek posted this photograph on his Instagram page after one of his performances. Part of his caption reads "dreams come true and we create them with our own hands, our efforts, our tears and sweat" (Instagram post, February 1, 2022). Alek acknowledges his own involvement in '*future-making*': temporarily practicing what it would be like to explore a career as an actor, and the ideal imaginaries of a redesigned asylum-seeking process. To quote Morten Nielsen, for Alek his involvement with the play illustrated the ways that "the future exists as an unstable transformative potentiality" (Nielsen 2014: 17). The caption also emphasizes Alek's own agency and self-accountability he sees in this transformative process of being involved in the play. By saying "we have the power to change our lives, but it costs us everyday efforts, everyday overcomings and hardwork", Alek acknowledges that he is a future-*maker,* actively participating in the rehearsals of his future career.



Liked by **ditiswatwedoen** and **78 others**

How often the terrible events of our lives seem like the collapse of all hopes and seem to destroy the life we have to build. However, this is not so, and life always proves the opposite to us. With the right response to new circumstances, new opportunities open up, all you need is to take a fresh look at your life and with all the stress. Dreams come true and we create them with our own hands, our efforts, our tears and sweat. We have the power to change our lives, but it costs us everyday efforts, everyday overcomings and hard work. I chose to be #free and I say to myself #nomorefears

Figure 2. Screenshot of Alek's Instagram post shows him standing on stage during the production run of "*Hoe Ik Talent Voor Het Leven*". Photo taken by unknown. Caption written by Alek. Both used with permission.

Writing unknowable futures: Kaif

Originally from Kuwait, Kaif is a member of the LGBTQIA2+ community. We met at a community-organized clothes swap hosted at the Makers Unite studio. Within a matter of minutes of talking, Kaif sprung to show me his Instagram account where he published some of his poems and written musings. For him, creative expression takes the form of writing, whether it is through poetry and monologues; performing stories that explore his repressed sexuality and dabble with alternative realities and unknowable futures. It allows him to express his thoughts and experiment with new ideas that he would have had to hide away out of fear of persecution as a gay man, prior to seeking asylum. After several meetings and walks together, he shared with me a story he was working on from the perspective of a straight married woman who wants to test her ego by asking her husband to sleep with a sex worker. His writing allows him to share and tell stories of his own sexuality that he has never expressed publicly before and imagine possible futures in this perceived sexually liberated country of the Netherlands.

Kaif often came back to philosophical and stereotypically "heavy" topics in our lengthy walks around Amsterdam's Centrum area. I often felt like he was hungry to explore topics that perhaps he did not have a chance to engage with in his youth while still residing in Kuwait. Once on a walk, he explained his writing process and inspiration for his most recent monologue about the Dam Square monument performed during a collaboration with a local production company that habitually engages with international performers. Kaif explains:

> And then, the last part was the monologue that I read about 'we' in the future. Because then, that part I am talking about Amsterdam drowning, but because of climate change. Like, I imagine that I am the only one swimming there. And I can just pull the tip of it, and everyone is just floating around me…At the end of the monologue, I saw that I, I am angry or I'm mad about the people who used to look at the Dam Square from below. Which is now, like me and you, [we] are looking at the Dam Square from below because the drownings have not happened yet. So, in this sense, I was talking about the future. (Field notes)

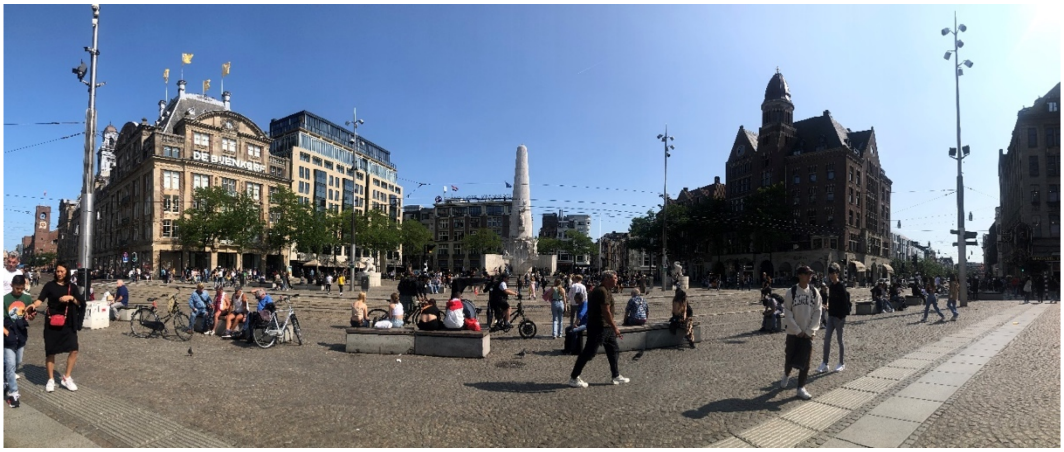


Figure 3. Panorama of Amsterdam's Dam Square and pedestrians walking by on the street. The Dam Monument is seen in the background. Photo taken by author.

Kaif prepared and performed a monologue about what the famous Dam Square monument might look like in 300 years for a one-weekend play. His vision of the future is grim as he wrestled with the effects climate change, rising sea levels, population growth, and lack of human intervention might cause.

Kaif rehearsed his monologue over and over multiple times. Despite the repetitive nature of rehearsals – similar to Alek's stage play – no two takes were the same and Kaif was re-energized to express the same words with new conviction and emotion. Each time, he resuscitated a call for help, sharing his desperation that climate change will flood our cities and leave our ancestors wondering what happened. Unlike Alek's performance though, Kaif depicted a future much further ahead in time, a century when he most certainly would not be alive to witness. In this way, his monologue explored how "people engage in potential futures that they know will never follow the present, and through the recognition of impossibility the future invades the present and itself is liberated. That which will never be is already there" (Bryant & Knight 2019, 129). For Kaif, the "that which will never be" refers to his own presence at the Dam Square's monument in the 200 to 300 years when he imagines this flooding to occur and when his monologue is set. He is projecting out into the future hundreds of years from now to say that if we (the collective 'we') do not act against the imminent climate crisis, we can likely expect sea levels to rise and the most recognizable pieces of our city will be distorted, submerged, and effectively gone. Therefore, Kaif writes about an unknowable future. He says:

> But my dream then is now, as though it's happening now. So, I just wanted that chance to, like, look at…try to change, to try and avoid what would have happened. But in this monologue, I'm already drowned and I'm already touching the tip of the monument. (Field notes)

This is yet another example of how creative newcomers like Kaif find ways to write and rehearse their own creative practices as a method to engage with unknown futures. The poetic rhetoric of Kaif's monologue is bleak and somber, especially since he intended for it to be a warning for audiences listening today. However, a warning can be interpreted as a statement of something that may – hopefully – never be a reality. Bryant and Knight explore this idea that, when practitioners think about the future, there is an admission that a *potentiality* may also never come to pass (2019, 108). Of course, Kaif's monologue is a piece of fiction, a poetic narrative that paints the Dam Square completely submerged underwater. However, it allows him to delve into a future, seeing it as a potential experience he does not wish to see come to fruition.

CREATIVE PERFORMANCE AS RESILIENCE

Alek and Kaif's stories show that creative self-expression can be a pathway to imagining new futures. They demonstrate how creative performance is future-oriented on a topical level: looking towards either near or distant futures and the potentialities that exist with or without further human intervention. For Alek, he is focused on an eminent future: a version of the future where refugees are treated with greater dignity in the asylum-seeking camps where temporary shelter is found. For Kaif, he imagines a more distant, and yet still imminent, speculative version of the future; where the effects of climate change have become so severe that sea levels have risen to the point that the famous Dam Square monument has drowned. Resilience in these performances reveals itself through the acceptance and admission to explore alternative situations. As a term, 'resiliency' captures the creative mindset that exists to speculate about the future and describes a method of experimentation with said futures. In doing so, Alek and Kaif's stories showcase the connection between forging new lives and navigating uncertain futures. As humans, I believe we are constantly looking for ways to adapt and evolve in new environments.

Often, normative views of resilience entail bestowing the concept in the present in reference to past events. Many a times, it is after a perceived obstacle has been overcome or a challenge has been faced that resilience is attributed to those involved. Yet, these ethnographic examples suggest resiliency possesses a future-orientation and can hinge on other temporal orientations. Both performers prepared for their respective upcoming performance with anticipation, showing how creative performance is future-oriented in that it requires preparation and rehearsal. Bryant and Knight posit that *anticipation* is a temporal orientation that allows us to conceptually pull the future towards us through executing actions in the present time space (Bryant & Knight 2019).

At the same time, rehearsal and practice are elements composing the *process* of imagining futures – a form of creatively cultivating resilience. In individual and collective ways, research participants were engaged with *rehearsing* a version of the future: practicing the performance; aiming to adjust and refine the level of emotion, intonation, hand gestures and bodily movements they wish to express at the time of (future) performance. This reflected a type of future-making exercise that Joachim Halse utilized in his case study where users were asked to improvise and perform, first with dolls then with acting out themselves, how they would engage a new waste management system at their work location (Halse 2013). Therefore, Kaif and Alek here too demonstrate a degree of "corporeal materiality" where the body itself becomes the materials involved in a type of future-*making*. Future-making has often been defined by giving tangible form to abstract imaginings or visions of the future (Halse 2013). In this scenario, if we think of performers' respective bodies as the materials, they are engaged with a method of "future-*doing*".

As a process that is rehearsed, tweaked, and then vocalized, performance is an accessible opportunity to "voice" aspirations (Hirschman 1970, in Appadurai 2013). In addition to the future being a mere subject matter topic for theatrical performance, both performers flex their vocational aspirations as creatives within the Netherlands: Alek experiments with a new vocational identity as an actor, while Kaif reinforces a professional identity as a creative writer. Thus, creative performance becomes an outlet and opportunity to find an accessible way to "voice" their aspirational *vocational* identities (Hirschman 1970, in Appadurai 2013).

Having been forced to relocate to a new country out of fear of persecution and violence, for Kaif, the process of integration is not far removed from a process of reinvention. While he previously had an unsatisfying career as a HR administrator at a major Syrian bank, Kaif experiments with his writing, seeking opportunities for publication and performance, while also enrolling in a social work degree to keep options open. I do not share this example to emphasize the individualism of Kaif's experience. I recognize that much literature on the topic of resilience connected to refugees seeks to draw attention to the role of community and credit "the contextual and social factors that support individual resilience" (Balfour *et al.* 2015, 18). This pair of refugees shows a need to express and vocalize their experience, demonstrating a method of also participating in democracy to highlight what a desirable future might look like for them and for the collective community.

By getting involved in each of these stage performances, both Kaif and Alek are exercising their "*voice"* (Hirschman 1970 cited in Appadurai 2013, 183-6) in a literal and both metaphorical way of representing themselves, gaining audible strength, and conviction with each performance. Appadurai insists:

> Voice is vital to any engagement with the poor (and thus with poverty), since one of their gravest lacks is the lack of resources with which to give "voice," [Hirschman 1970] that is, to express their views and get results directed at their own welfare in the political debates that surround wealth and welfare in all societies. (Appadurai 2013, 183)

To start with Alek, through his involvement in the play, he is exercising his metaphorical, creative "voice" to express his views and desired results to change the treatment of refugees in asylum-seekers' camps. In this way he is maximizing an opportunity to engage with an audience to express his metaphorical "voice". For Kaif, his writings and monologue engage with already unknowable futures to accept and speculate what might occur if our collective actions do *not* change.

Coupled with the excitement of trying something new, theatre becomes a participatory act of democracy, where performers are voting for what an alternative future might look like for them and the collective. Public performance is used as an explicit example by Appadurai that can captivate audiences to seek future change. Similarly, Damery and Mescoli connect the arts to political engagement, stating:

> In spite of structural constraints, art is a means (and a product) through which migrants, independent from their legal status, participate in the local socio-cultural life and elaborate concrete claims concerning their own situation as well as global concerns that are related to it—such as migration governance and politics. Art practice constitutes a creative political engagement in the local context (Salzbrunn 2014) and also a way for people to find belonging without caveats (Martiniello 2018). (Damery & Mescoli 2019, 14)

Investigating resilience can be mistaken as an opportunity to investigate the empowerment of audiences to withstand social change or overcome adversity, fundamentally overlooking the possibility to see resilience as a way of evolving to inspire more change that allows for certain aspects to flourish.

Yet, citizenship also influences the boundaries by which we perceive and interpret artistic intervention as well. Cultural theorist Nancy Adajania uses the concept of '*performative citizenship*' to draw attention to this and explains it as a "crossover from symbolic to actual political action, and the production of a newly aware and self-critical community that can transcend the traditional boundaries of group identity" (Adajania 2015, 40). As ethnographers, this concept ushers our positionality and relationship to the subject matter at hand to the forefront, to (re)consider how our status impacts the lens by which we see performance. For example, Alek is among forty cast members comprising the ensemble, excluding the actors, musicians and past ensemble members who had to drop out of the play when coronavirus hit. Their rehearsals and interaction with the play is seen as an act of '*performative citizenship*', by bringing awareness to the treatment of asylum-seekers and forming a new group identity as a cast ensemble. Ironically, the play is in fact on the topic of refugees – a controversial matter related to the very nature of citizenship itself. Ariella Azoulay draws on her expertise following Islamic and Palestinian projects to discuss the citizenry boundaries of the body politic in re-affirming nation-state identity. Azoulay proposes:

> In the same vein, citizenship in differential political contexts cannot be understood just as an optional theme for political discussion and artistic intervention. Citizenship is what defines the relationship between the protagonists involved in the production and consumption of art—i.e., artists and spectators alike—and what is reproduced through it. (Azoulay 2015, 70-71)

As ethnographers, it is equally importantly to consider the positional lens we adopt in understanding artistic interventions and the production of creative performance. To see creative performance as a method of resilience means allowing for the aspirations expressed through the creative practices in question to stem from experimentation; and recognition of such vocalizations occurring against the backdrop of uncertainty and despite anticipated change. I note that similar lessons can be drawn from the practice of design fiction, as ways of engaging with fictitious future scenarios, to aid speculations and spur political action (see Gonzatto *et al.* 2013; Salazar *et al.* 2017).

PROCESSES OF RESILIENCE VERSUS SYSTEMS OF ASSIMILATION

Seeking out resistance or resiliency was not initialling one of the main goals of this ethnographic research. As a researcher, I set out to understand how refugees engaged with temporal orientations towards the future and pursued their vocational aspirations. But discussions around aspirations undoubtedly involved observations around how do refugees enact their vocational aspirations.

In *The Future As Cultural Fact,* Appadurai warns against the '*ethics of probability*': ways of thinking, feeling, and acting that depend on statistical and probabilities tied to the growth of capitalism, profits from catastrophe or disaster (Appadurai 2013, 295). Appadurai argues in favour of the need to nurture their 'capacity to aspire' (Appadurai 2013). The fluid uncertainty that refugees face in the Netherlands and lack of economic resources, irrefutably places them in a vulnerable position more susceptible to these ethics of probability. When viewing resilience as a processual form, the '*capacity to aspire'* which may be considered weakened during their migratory experience, can be reframed as something potentially neither lost nor stolen but tucked away during the migratory experience.

Thus, resiliency is shown as a slow process that takes time to nurture and grow. It is rehearsed and practiced repeatedly, reinforced, and strengthened like a monologue committed to memory. However, there are systems of assimilation at play in the Netherlands that apply pressure on those to adapt and learn that suits rather not their creative pursuits or vocational aspirations, but what works for the existing system already. Resilience can be collective and individual and, as these examples have shown, engaging audiences to react and inspire action to change future outcomes, challenging existing systems of assimilation, and allowing for the vocalization of creative self-expression to experiment with different futures. As ethnographers, we must look at what may or could be changed (as a reactive process), but also what we want to stay the same and keep constant within our lives. Where are the opportunities to grow "roots" (Pink & Seale 2017) that keep us planted in new ground that is fertile for experimentation? Broadly speaking, where do our interlocutors seek consistency, opportunities to act and enact their desired future? How are those opportunities for consistency in contrast for the experimentation that sprouts a desire for change too?

Finally, I return to arguments made by Panthea Lee, who observed and condemned how many ethnographers and researchers – herself included – are often complicit in assisting large companies and government bodies (organizations that are rich in resources and able to assert power and authority) to imagine future scenarios that benefit their interests. She asserts:

> When these folks [those who work for companies and governments] are asking what the future should look like, we get the version of reality that we're living in now. And I think we need to bring folks that have radical imaginations, that bring moral clarity and courage, to ask those questions. (Lee 2021)

Building upon the writings of anthropologist Anand Pandian, Lee goes to argue that it is our responsibility as ethnographers to listen to the radical imaginations of artists as social actors to write ethnographies that possesses moral clarity (Pandian 2019, cited in Lee 2021). I believe this type of moral clarity is meant to suggest a type of innocence that is untampered by the '*ethics of probability'* that Appadurai is referring to: ideals and values that remain when not tied to the growth of capitalistic ventures. In this way, my research contributes to the current discourse tied to anthropology of the future and the benefits of future-oriented ethnographic studies from a bottom-up approach. By critically examining how refugees engage with creative performance, I encourage the EPIC community to reconsider how resiliency is often projected onto vulnerable populations and caught up on exclusionary dialogues of empowerment. Idolizing displaced groups can overlook how researchers think about rebounding as a process, but really thinking more critically about the benefits from reimagining (letting go of former expectations) to then speculate new scenarios. Instead, a bottoms-up approach has allowed commentary on how forced migrants exercise their own '*capacity to aspire'* (Appadurai 2013) and search, and/or negotiate, for terms of recognition in their daily lives while seeking employment opportunities. Anthropological future studies can benefit from the contribution of even more ethnographic fieldwork that adopts an approach of resilience as a mindset to engaging with creative practices.

CONCLUSION

From the perspective of refugees in the Netherlands, resiliency is shown to be future-oriented and processual through creative experimentation and exploration. Once granted legal status, asylum-seekers and refugees in the Netherlands facing drastic degrees of uncertainty towards their future experiment with new aspirations while integrating into the Dutch economy. Refugees bring to life Appadurai's '*capacity to aspire'* through the processual steps involved in creative performance and the activation of their "voice" (Hirschman 1970, in Appadurai 2013). Despite going through what can be extreme mental health concerns, requiring intense therapy to deal with trauma, depression, anxiety and/or PTSD, there are accounts of people finding new forms of creative self-expression to experiment and play with new imagined futures. The anticipation and hope of multiple possible futures or alternative ways of living encourages ethnographers to acknowledge how vulnerable populations are inspired to dream and, by doing so, preserve and maintain a *'capacity to aspire'* (Appadurai 2013).

By centering present creative practices and future uncertainty, this paper unpacks how we can advance the value of ethnography by learning to clue into hidden narratives of creative resilience among forcibly displaced migrants. I suggest that through the observation of creative arts-based practices, new narratives can emerge (which may be called a form of 'design fiction'). Resiliency is not simply about adapting to a new life, but about pushing the boundaries of aspiration and experimenting with previously inaccessible or unimaginable futures due to circumstance. To borrow the words of fellow design anthropologist Thomas Binder, "Prototyping is not only a generative process of ideation. It is just as much a rehearsal of new practices" (Halse *et al* 2010, 180). "Prototyping" may very likely be a much more relevant and commonly heard term among the community of research practitioners connected to the EPIC. As we work alongside vast teams of strategists, designers, and engineers, I encourage practitioners to toil with how we leverage generative arts-based practices to engage with alternative futures. Where do we see the benefit of more processual steps that prepare us for the future and allow us to 'grow roots' that stabilize us in our practice and, perhaps more importantly, ground us in a common vision of the future?

Most of this paper is directed to employing resilience as a creative mindset which invokes further applications to methodology and how we engage with research participants in understanding their dreams and aspirations for the future. However, given the global influx of refugees as an issue of today, this paper also raises a question to ethnographers, how can we adjust our participation in systems that work beyond 'integrating' vulnerable populations by providing them with resources to voice their (creative) imaginations? While participatory arts programmes for those with refugee backgrounds have achieved greater public recognition and documentation in recent years (Balfour *et al* 2015), it would be a disservice to say that the insights from this paper are only applicable to forced migrants or new arrivals. How do we refrain from oversimplification, while honouring the agency and variety of stories of those most marginalized in society? I hope to facilitate discussion on ways that art and work can be combined that does not simply resist assimilation but participate alongside those pressures. I urge practitioners to adopt a mindset where resiliency is grounded in pursuit of aspirations, challenging a belief that adaptation, learning, and evolution sprout in defense of unwanted disruption.

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NOTES

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Building Resilient Futures in the Virtual Everyday

Virtual Worlds and the Social Resilience of Teens During COVID-19

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Virtual worlds have been central to an imagined future in which advances in technology propel new social practices. The recent focus within the technology industry on the "metaverse" is the latest iteration of imagined, utopian virtual worlds which have continually surfaced in literature, film, product development, and more since the 1960s. One might say that the concept of virtual worlds is resilient—but do these proposed virtual worlds actually make society more resilient? We argue that despite their endurance, these concepts present a deterministic vision of a singular future towards which humanity is inevitably progressing, revoking the agency, desires and resilience expressed by people today in their everyday realities. Building on original ethnographic research conducted with 31 teenagers in China, Germany and the US as well as past anthropological work on using ethnography to anticipate the future and teenage online practices, this paper conceptualizes resilience as present-day creative adaptations which propel people into more desirable futures. Virtual worlds emerge as multilayered and equiprimordial spaces for the building of social worlds, giving teenagers novel tools to build and augment their social resilience.

INTRODUCTION

Helen is a 14-year-old student in North Carolina with an enthusiasm for social media, games, and fashion. When we met her in a remote interview, she had no trouble expressing herself in virtual format. As a teenager whose life and education moved online at the onset of the pandemic in 2020, she was accustomed to using technology to show other people who she was. Helen seamlessly switched between panning her smartphone around her room to provide a tour of her most precious objects and sitting front and center on her laptop video chatting with adults about her life. Not being able to see friends in person during COVID-19, moving online was an important way for Helen to maintain and build meaningful relationships that helped her to cope with social isolation. Living a social life virtually had become so important, that it remained a central part of Helen's post-pandemic life.

For Helen, however, connecting virtually with others had become more than just a coping strategy. Soon we learned that Helen had ambitions to be a social media influencer. She experimented with new short-form videos that might increase her engagement and followers in her PreppyTok community.[2] Helen's approach to documenting her life was meant to come across as natural, but it was also highly curated. Her most recent project was a "start my day" video posted to TikTok. She edited different clips of herself going about her morning routine–waking up, making the bed, using a special soap near her bathtub, and sitting in front of her laptop to show herself as being productive. She emulated these curated physical forms of living in virtual spaces by building "preppy" beach houses on Roblox that, as she said, she would like to live in one day. Inspired by houses that she had seen in person and online she enjoyed showing them to Roblox friends and school friends and sharing videos about them on TikTok. Performing creatively by using the tools available to her in her virtual worlds and in front of virtual audiences was part of Helen's everyday life.

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By the time we talked to Helen in February 2022 the pandemic lockdown had been lifted for several months and she was back to school. She was able to meet friends in person. Nevertheless, she continued many of the online practices she developed during lockdown when socializing in person was impossible. What is more, meeting with friends in person had become integrated into her online performance. On her TikTok channel, she would not only post videos of herself, but also content created with her friends in school. When talking about the different platforms and online spaces she used, she described them as spaces that are as important as seeing friends in person in school or during her free time. Often, the physical and virtual spaces and the social relations she had built in them were intertwined and complementary.

Despite this emerging everyday reality, popular visions of "the metaverse" continue to dominate the way virtual worlds are imagined. This paper aims to draw attention away from these futuristic visions by presenting insights gathered in ethnographic research with 31 teenagers aged 13-17 in the United States, China, and Germany, conducted by the research and innovation agency Stripe Partners in conjunction with Intel Corporation. The purpose of the research was to understand teenagers' social connection practices today, in order to anticipate the needs of future laptop users. In doing this work, we came to develop not only a set of design ideas for the future laptop, but a more nuanced, robust understanding of the future of the "metaverse" and how it might run contrary to popular imaginations of virtual worlds.

The research was conducted in February and March 2022. It was a unique time to understand which of the online practices that teens had developed during the pandemic would endure—in all countries studied, pandemic lockdowns had been lifted for several months. We argue that for teenagers in the post-pandemic age, virtual spaces are not a vision of a proximate future but an essential part of their everyday social lives. Not only are they as important as physical spaces in generating social resilience—they also give teenagers a new set of tools to extend, transform and personalize their social worlds in ways not possible in the physical world. To substantiate this argument, we first show how the enduring resilience of futuristic visions of virtual worlds blind us to emerging, often more banal everyday practices of social resilience in, through and across virtual platforms in the here and now. We present our ethnographic research with teenagers as an alternative approach to anticipate the shape and form of future virtual worlds. We then outline our definition of virtual worlds as social worlds before diving into our data and exploring 5 teenage online practices that we think will endure into the future. In our conclusion we propose a reconceptualization of virtual worlds as real spaces that are equiprimordial—that means as essential as physical spaces—for the building, maintaining, and enhancing of social resilience through a novel set of social tools.

THE RESILIENCE OF "VIRTUAL WORLDS"

Virtual worlds and experiences have long been central to an imagined future in which advances in technology propel new social practices. In literature writers such as Robert A. Heinlein imagined the experience of telepresence in his novel *Waldo* as early as 1940 (Heinlein 1969). Later, William Gibson and Neal Stephenson coined the terms cyberspace, avatar and metaverse in their books *Neuromancer* (2015) and *Snow Crash* (2011). In the world of film, cinematographer Mortan Helig's 1960s futuristic *Sensorama Machine* was designed to immerse cinephiles into a virtual film world by simulating a multi-sensory experience (Stanford University 2011). Since its release in 2018, Steven Spielberg's *Ready Player One* has become the movie of reference when it comes to describing how a virtual reality might look.

While Spielberg's world is one of escapism and adventure, series like *Black Mirror* have created influential dystopian accounts of the potential impacts of virtual reality on interhuman relations (Keslowitz 2020). Corporations have been equally influential in shaping popular imaginaries of virtual worlds. In the 1980s, Apple's "Big brother is watching you" TV spot warned of a more dystopian future of surveillance to portray Apple as an alternative to market concentration. More recently, Mark Zuckerberg envisioned "the metaverse" as an "embodied internet," a homogenous singular world that is navigated by a digital twin at the endpoint of a linear development from "desktop to web to phones, from text to photos to video" (Meta 2021).

All these cultural and commercial productions have fed popular imaginaries of what virtual reality might look like in a proximate future. They have also proven to be resilient as visions that inspire technologists and companies to work on their realization (Conte 2017, 288), enabling their social enactment (Woolgar 2002, 15) and generating new meanings and uses for technologies (Baym 2015, 23). In short, they have been "powerful stimulators of (...) social changes" (Schwartz Cowan 1976, 21) in the way people build and interact with technologies.

The resilience of such visions is proof of their power and imaginative force. Yet, we think that looking at them to anticipate the future has limited value for two reasons. First, they tend to place emerging technologies and their impact on social life in an extraordinary "proximate future," continually out of reach.[3] Such a framing leads us to overlook how much of that future is already happening now in more banal and messy everyday ways (Bell and Dourish 2007, 2). To argue with historian Ruth Schwartz Cowan, a sole focus on grandiose visions of technological innovation bears the danger of blinding us to what the impact of contemporary technology on people's everyday life can tell us about how the future might look.

Second, as they are part of popular conversations about anticipated technological change, grand visions of technological innovation tend to tell us more about how a particular technology has been perceived in a specific time in history than the myriad ways it has been adopted and used. Grand visions bear in them the desires, fears and preoccupations of the social context in which they emerge (Baym 2015, 23) taking the shape of what has been termed the "utopia – dystopia syndrome," a "public discussion stuck in two worn-out grooves, one of salvation and fascination, the other of doom and abhorrence "(Smits 2006, 490). Imagined as "miracles or monsters" these visions of technological innovation are perceived as opposite to real life (Woolgar 2002, 3), or at least, a mere simulation, illusion, or fictional version of it (Baym 2015, 5) that is "imposed on human lives by irresistible forces of technology determinism" (Fox 2018, 1; see also Marx and Smith 1994)—a perception that has also impacted academic literature on connecting in virtual worlds. Especially prior to the pandemic, a large part of the scholarship on the impact of digital connections on individuals' social life has focused on how individuals "resist" digital media by disconnecting or limiting their media use to build more meaningful connections "in real life" (Woodstock 2014; Syvertsen, 2017; Hardey & Atkinson, 2018). Psychologists warned of virtual worlds leading to us forgetting about real social interactions (Aboujaoude 2012) and nurturing an escapism that could undermine meaningful social relations (Evans 2003) and communication (Turkle 2015), ultimately diminishing individuals' social resilience.

The resilience of these visions may be explained by the social function they serve. As Martijnjtje Smits has argued drawing on Mary Douglas' work on ideas of impurity and danger in societies (Douglas 1999), these polarized perceptions emerge "when a phenomenon does not fit in current cultural categories that order the world" (Smits 2006, 493). For Douglas, when trying to make sense of new phenomena, any society tends to perceive them either as a threat or a miracle. Smits applies this insight to emerging technologies. She shows how these polarized perceptions appear as these technologies become part of our lives and their use affects "how we see the world, our communities, our relationships, and our selves" making the familiar become unfamiliar (Baym 2015, 2) and different from established cultural categories.

Instead of focusing on grand visions we suggest that studying technology's impact on banal everyday behaviors may help to show how lives are actually transformed and technologies adopted in ways often not expected by visionary thinkers, writers, or companies (Schwartz Cowan 1976). In doing so we follow studies of technologies' cultural domestication that have shown how technological innovations are appropriated through trial periods through which they become part of people's lives or are rejected (Lehtonen 2003; Silversone and Haddon 1996). We believe that following such an approach helps us to understand how new technologies are adapted to existing practices of sociality and how they shape the cultural categories of socializing of today and tomorrow (Smits 2006, 501). By adopting an ethnographic method in a time of transition from a pandemic to a post-pandemic reality we also follow an ethnofuturist approach that we think is necessary to identify enduring behaviors that point to potential futures (English-Lueck, Ladner and Sherman 2021; Maiers 2018).

There are of course limitations to this approach. We cannot know if all the behaviors we have seen will in fact endure into the future. First, the pandemic presented an extraordinary social condition of unprecedented collective isolation. Second, our research focused on teens. This means some of the behaviors we have seen are likely to be behaviors these teens outgrow and leave behind once they transition into adulthood. We hope to mitigate the first limitation having done the research when teenagers had transitioned from pandemic lockdown to a post-pandemic new normal where in-person social connections had become possible again. Thus, the behaviors that remained in place during our observations are likely to remain part of their lives. To tackle the second limitation, we designed our research in a way that helped us to distinguish between ephemeral, teen specific and enduring, long-term shifts of behavior. We did so by embedding our respondents' current online practices into a more long-term perspective on their behaviors, asking them to reflect on processes of change—specifically what had changed in their lives in the past couple of years, what they were dealing with at the moment of the interview, and how they anticipated their life to change in the following 2–3 years. That helped us to identify those practices that emerged prior to the pandemic, were amplified by it, continued in the post-pandemic era and, as a consequence, are most likely to endure into the future. We also recruited teens across a spectrum from 13–17 years old, which enabled us to compare past and present behaviors between younger and older teens to help distinguish practices that might dissipate. By delivering a rich picture of teenagers' present-day technology practices we hope our insights provide a lot more than context to future predictions based on big data (Maiers 2018) and help to make meaningful predictions about how everyday life with, in and through virtual worlds will look, sound, and feel.

VIRTUAL WORLDS AS SOCIAL WORLDS

We think that teenagers' skillful and creative everyday use of digital media to build meaningful connections during the pandemic demands we adopt a more nuanced understanding of the relationship between digital media and social resilience. Rather than conceiving of resilience through the lens of "resistance to" virtual worlds, we show how teenage technology practices reveal "resilience with" by actively shaping what future virtual worlds could and should be through their behaviors today. We thus propose to reconceptualize virtual worlds in three ways.

First, instead of relying on popular notions of virtual worlds as fictional spaces that are opposite to real life, we follow tech philosopher David J. Chalmers and define virtual worlds as virtual spaces that are genuine realities. They are neither illusions nor fictions, but fully immersive and interactive computer-generated environments for real life (Chalmers 2022, 202). As a consequence, we believe that it makes sense to conceptualize virtual worlds as essential spaces for building new and complementing existing "social worlds" (Quercia et al. 2012) . The sociological concept of social worlds defines "amorphous and diffuse constellations of actors, organizations, events, and practices which have coalesced into spheres of interest and involvement for participants" (Unruh 1980, 277). Boundaries of social worlds are blurry and dynamic and can change over time. They are held together by people who share interests, views and ways of doing that are continuously co-produced through communication, interaction and the creation of shared cultural artifacts (Unruh 1980, 271). This interactive dimension is central but does not mean that every participant in the social world interacts with each other. Rather, there is a shared culture that allows for a shared understanding and interaction fostering a sense of community that is essential for the building of social resilience (Hall and Lamont 2013, 2). As a consequence, virtual worlds can be conceptualized as equiprimordial to physical worlds in the construction of social resilience.

"Equiprimordiality" or also "co-originality" is a philosophical concept that emerged out of Martin Heidegger's philosophy and was later picked up by Jürgen Habermas in his discourse theory. It describes a co-dependent relationship between two phenomena. Saying two phenomena are equiprimordial means that both are "conceptually presupposing the other in the sense that each can be fully realized only if the other is fully realized" (Bohman and Rehg 2017). Below we will show how in today's teenage social worlds virtual and physical spaces presuppose each other.

Secondly, defining virtual worlds as social worlds means adopting a broader approach to virtual worlds that includes apps, social media platforms and messaging platforms that teenagers use to build, assemble, and maintain their social worlds virtually. Here we diverge from David Chalmers' definition. Chalmers defines virtual worlds as integrated, fully immersive worlds where users apprehend the environment "with all their senses, as if they're physically inhabiting the environment, and where no trace of the ordinary physical environment remains" (Chalmers 2022: 189). We believe that limiting the concept of virtual worlds to fully immersive experiences risks overlooking novel integrations of virtual with physical social worlds. Social media platforms and messengers might have been around for a while. In and of themselves, they do not represent virtual worlds. However, today's teenagers are the first generation that grows up in a world where social media have always existed as constantly accessible via mobile devices and apps. We observed that by using different apps, functions, and platforms at the same time and to varying degrees of immersion, teens combine and juxtapose different layers of virtual and physical social worlds.

Finally, we've observed that these virtual worlds are not only equal to and integrated with physical spaces for teenagers' construction of social worlds and social resilience. They also offer teens a novel set of interactive tools to build, extend, modify, and manage social worlds in unprecedented ways, providing them with alternative resources to build their "ontological security" (Nettleton et al. 2002). This is because virtual worlds are characterized by three central interactive qualities—the social interactivity with different individuals and social groups, the technical interactivity with the devices they use enabling them to personalize their interfaces and adapt them to their personal preferences and, finally, their textual interactivity that allows them to enter a "creative and interpretive interaction between users (readers, viewers, listeners) and texts" (Baym 2015, 9; see also Fornäs et al. 2002, 23). As danah boyd has shown, even prior to the pandemic teens started using online platforms to build their own virtual spaces online to explore their identities and stay connected to worlds and people they care about and cannot interact with in person (boyd 2007, 20). As we will demonstrate below, the pandemic has amplified this behavior and turned virtual worlds into essential spaces for the building of teenagers' social resilience. Coming out of the pandemic, teens' present-day creative use and adaptations of virtual worlds' interactive qualities enable them to build and maintain meaningful social worlds which propel them into more desirable futures in the face of a challenging present (Hall and Lamont 2013, 2). They enhance teenagers' social resilience as they increase their individual agency in building social worlds that cater to their individual needs in ways that are not possible in social worlds that are purely anchored in physical spaces.

BUILDING SOCIAL RESILIENCE IN THE TEENAGE VIRTUAL EVERYDAY

As we briefly explored with Helen's example in the introduction, virtual spaces gained significance as spaces for creating social connections during the pandemic, when the use of physical social spaces was limited. In what follows we explore five post-pandemic practices we found teenagers continued to use to build their social resilience beyond the pandemic:

1. Teens build and inhabit a plurality of integrated and assembled virtual worlds
2. They manage the degree of immersion within them
3. They modify their social selves and personalize their audiences
4. They maintain and develop social relations through the creation of social artifacts
5. They remember virtual pasts and project virtual futures

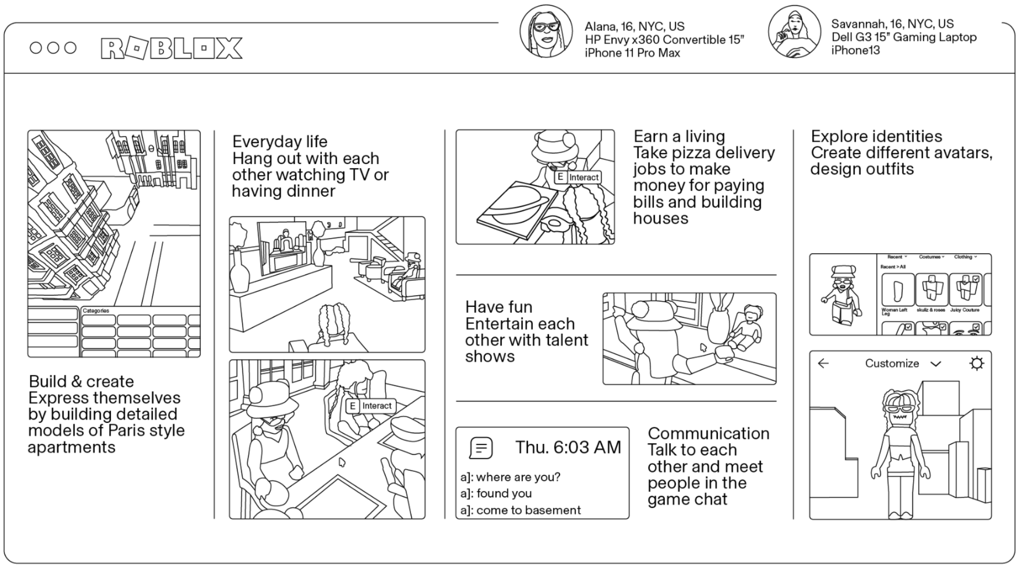
Engaging in these activities helps teens not only to be more socially resilient in present everyday situations. It also gives them the tools to adapt virtual worlds to build the social worlds they desire to inhabit in the future.

Teens build and inhabit a plurality of integrated and assembled virtual worlds

Virtual platforms enhance teenagers' social resilience by enabling them to build their own virtual worlds according to their personal preferences, interests, and needs. We found that these worlds can take the shape of integrated and assembled worlds. Integrated worlds tend to be constructed around a place where teenagers express themselves in relation to defined social groups, e.g., existing groups of friends they have in the physical world such as classmates, or friends they've made online with whom they share an interest or passion. Multiple activities happen in one centralized application or platform that integrates multiple functions. It can exist across multiple devices but is likely to be centered on the laptop or the PC. Through their integrated character and their boundedness to a stationary laptop or PC setup, integrated virtual worlds are more insular and less interoperable with other platforms.

In our fieldwork we met Alana and Savannah, two 16-year-old girls from New York City whose friendship predated COVID-19 (see figure 1). When they were unable to see each other during the lockdown, they started meeting and hanging out in Roblox, building complex houses that imitate real life architecture they have seen in physical worlds in New York, or virtually when browsing the web. During lockdown they would hang out in their respective virtual houses, engaging in banal everyday activities such as making food, eating or watching TV together or doing food deliveries to earn money to pay the bills for their houses' electricity. They were living everyday virtual lives that were not possible to live together in the physical world. Coming out of the pandemic they continue to hang out in these worlds when they're not together in person. Roblox allows them to do multiple things by immersing themselves into one platform: hang out, be creative, entertain each other, earn a living that helps them to pay for in-platform items, communicate with each other in the game chat or explore different identities by creating multiple avatars. Both agree to meet up in this world on specific days and times, using their laptops to enter it from their desks in their rooms.

Even if some elements of this world were predefined, it gave both of them the opportunity to build their own personal and shared social spaces that provided the backdrop for interactions amongst each other and with other Roblox players. Instead of having to adapt to a social world that they were thrown into (as would happen in physical environments) they could build their own, according to their personal preferences and interests.


ROBLOX
Alana, 16, NYC, US
HP Envy x360 Convertible 15"
iPhone 11 Pro Max
Savannah, 16, NYC, US
Dell G3 15" Gaming Laptop
iPhone13
Categories
Build & create
Express themselves by building detailed models of Paris style apartments
Everyday life
Hang out with each other watching TV or having dinner
E Interact
Earn a living
Take pizza delivery jobs to make money for paying bills and building houses
E Interact
Have fun
Entertain each other with talent shows
Thu. 6:03 AM
Communication
Talk to each other and meet people in the game chat
Explore identities
Create different avatars, design outfits
Recent
Costumes
Clothing
Recent > All
Woman Left Leg
skullz & roses
Juicy Couture
Customize

a]: where are you?
a]: found you
a]: come to basement

Figure 1: Visualization by authors including photos and screenshots from the fieldwork.

Teenagers' virtual worlds can equally take the shape of assembled worlds that exist across a multitude of platforms and devices. These worlds tend to be constructed around an identity or social circle to create a sense of place. Different applications and platforms have different functions that fulfill the individual and collective needs that the "inhabitant" of this world has. Assembled worlds can exist solely on the phone and/or the laptop but they are more likely to be carried across multiple devices and integrate with other virtual and physical worlds as they are modular, portable and permeable.

Take the example of Shanshan, a 16-year-old girl from Beijing. Her assembled world was held together by her passion for a Chinese singer (see figure 2). She'd engage with other fans in a virtual world that she assembled herself across different platforms. She'd co-watch her idol's videos on TikTok while hanging out virtually with friends on her phone. She'd listen to her idol's music on NetEase or QQ Music on her laptop while doing homework. She'd connect with other virtual and school friends by chatting with them about their idol on WeChat on her phone and laptop. And she'd create elaborate fan art on Photoshop on her laptop that she'd post on Weibo and WeChat and sell to other fans. Shanshan's assembled virtual world corresponds to what Couldry and Hepp have described as "media ensembles" (Couldry & Hepp 2017, 132) assembled according to the specific needs, here sustaining a fan culture across different platforms, applications, and devices (Couldry 2012, 163–178).

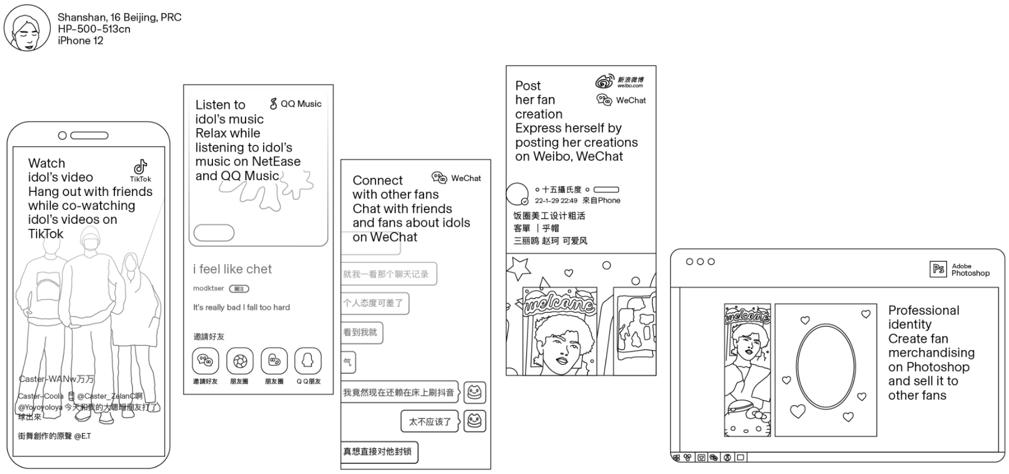

Shanshan, 16 Beijing, PRC
HP-500-513cn
iPhone 12
Watch idol's video
TikTok
Hang out with friends while co-watching idol's videos on TikTok
Caster-WANw万万
Caster-Coola @Caster_ZelanC啊
@Yoyoyoloya 今天和我的大聰明朋友打了球出來
街舞創作的原聲 @E.T
Listen to idol's music
QQ Music
Relax while listening to idol's music on NetEase and QQ Music
i feel like chet
modktser
It's really bad I fall too hard
邀請好友
邀請好友
朋友圈
朋友圈
Q Q朋友
Connect with other fans
WeChat
Chat with friends and fans about idols on WeChat
就我一看那个聊天记录
个人态度可差了
看到我就
气
我竟然现在还赖在床上刷抖音
太不应该了
真想直接对他封锁
Post her fan creation
新浪微博 weibo.com
WeChat
Express herself by posting her creations on Weibo, WeChat
十五播氏度
22-1-29 22:49 來自Phone
饭圈美工设计粗活
客單 | 乎帽
三丽鸥 赵珂 可爱风
welcome
Adobe Photoshop
Professional identity
Create fan merchandising on Photoshop and sell it to other fans

Figure 2: Visualization by authors based on photos and screenshots from the fieldwork.

Teens cannot only personalize the aesthetics and modules that carry these virtual worlds. Building multiple social worlds virtually allows them to express, maintain and enact multiple identities within and across them. This enables teens to relate to virtual worlds on their own terms, expressing only those parts of their identity they want to share with others in ways not possible in social worlds anchored in the physical world. Self-expression can either take the shape of bolstering one identity across several virtual spaces or enacting different identities within or across different virtual worlds. For example, Simon, a teenager from the US, uses multiple virtual platforms to build and assemble a single identity using Roblox avatars (and photos of it) that he designed to look like him. He plays WW2-themed games in Roblox while chatting to other players on Discord and making friends with other teenagers who share an interest in WW2 on Facebook. Lanlan from China, on the other hand, enacts different identities across different virtual platforms. She modified her real appearance with filters and posted them on TikTok. She created so-called Original Characters[4] on Picrew as fictional "better versions of myself" and used them to do video calls on TikTok. She turns off the video to voice chat with her best friends on WeChat as her "authentic self" so she "does not have to dress up." Just like physical worlds, virtual worlds can thus be used for real life encounters. Yet they also enable teenagers to create, inhabit and manage their virtual worlds in ways they never could in physical worlds, allowing them to create their own identities distinct from the ones they have in the physical world. In that way they can create fictional identities in real social spaces, and, inversely, use their real selves to navigate fictional virtual worlds.

Teens' use of these complex integrated and assembled worlds and their navigation through multiple identities showcase a novel degree of media literacy and sociality enabled by cross-media interfaces that does not limit itself to the understanding, interpretation, and use of digital media. It is a *deep* media literacy that allows teens to construct personalized social worlds, to communicate in and about them and to express their individual identities in multiple novel ways (Couldry & Hepp 2017, 341–2). Enabling teens to build alternative social worlds and identities helps them to create ways to build social resilience in ways that correspond to their personal preferences and needs and that are not possible in a more restrained physical world. These worlds help teenagers to increase their social resilience as they can build personalized social spaces, they know they can turn to in the face of everyday challenges in the present and the future.

Teens manage their degree of immersion into their virtual worlds

Virtual worlds increase teens' social resilience as they can connect to and disconnect from them to different degrees where and whenever they feel the need to. When they access them, they can decide on the degree to which they want to immerse themselves in these worlds, regulating their presence in these virtual worlds via the degree of sociality and immersion into them.

The level of immersion ranges from thin *online* connection, such as glancing at a notification on a smartwatch or listening to music on Airpods while out and about, through to thick *online* connection, such as hanging out in Roblox or Fortnite. Thin connections involve engaging intermittently with a low density of audio-visual information while thick connections represent the fully immersive mode David J. Chalmers describes in his definition of virtual worlds. The second dimension which shapes teens' connection to virtual worlds is their level of sociality, from thin *social* connection, such as asynchronously sending each other videos on TikTok and liking social media posts, to thick *social* connection, such as playing a game together, hanging out in Fortnite or making a TikTok video together. Similar to what Nancy Baym has identified as rich and lean media (Baym 2015, 9), the thicker both online and social connections are, the richer the mediated experience and the more important it is to be able to show and be able to read social cues. The importance of the physical surroundings retreats while the importance of the virtual world and one's behavior and ability to navigate it gains in prominence. The thinner both are, the leaner the experience and the more detached from the one single virtual world one is. Interaction is not synchronous and happens through mediated layers.

We found that together these two dimensions, the level of immersion in technology and their level of social connectedness, encapsulate 4 distinct modes of connection: asynchronous presence, ambient awareness, individual immersion, and immersive co-presence (figure3).

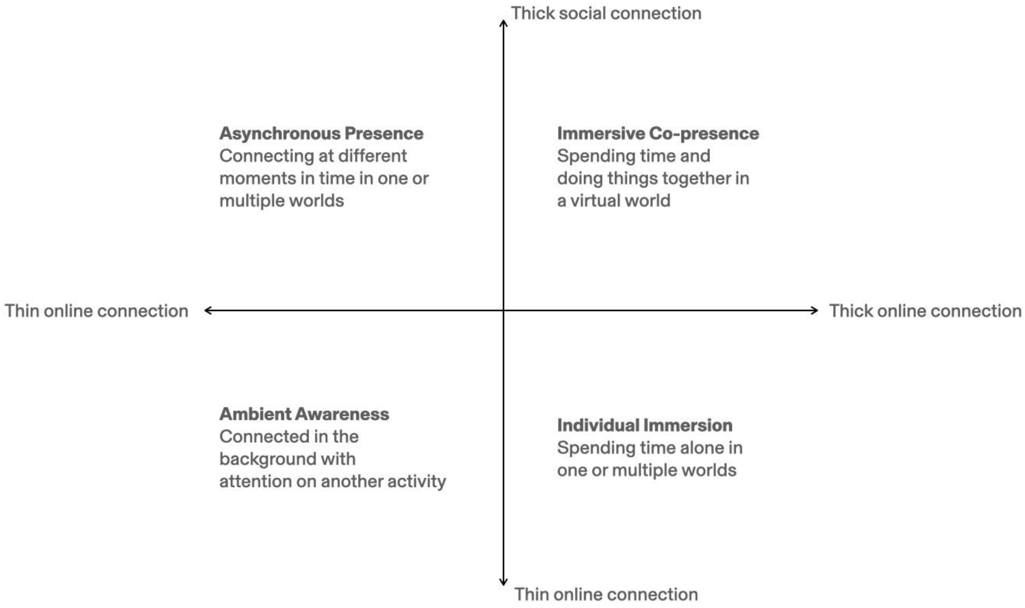

Thick social connection
Asynchronous Presence
Connecting at different moments in time in one or multiple worlds
Immersive Co-presence
Spending time and doing things together in a virtual world
Thin online connection
Thick online connection
Ambient Awareness
Connected in the background with attention on another activity
Individual Immersion
Spending time alone in one or multiple worlds
Thin online connection

Figure 3: Four modes of connection to virtual worlds.

Teens remain persistently connected to their virtual worlds, but they shift between modes depending on the activities they are engaged in. For example, Max's (DE) Fortnite world had become particularly meaningful to him during the pandemic. He frequently spent evenings with friends hanging out in Fortnite, sometimes battling each other, but other times just chatting (immersive co-presence). He and his friends would also post about their Fortnite activities on social media, teasing each other about aspects of the gameplay (asynchronous presence). On his own he spent time watching better players live stream their games on Twitch and spent money on upgrading his skins (individual immersion). Finally, he would discover new Fortnite seasons while browsing through TikTok, which often acted as a trigger to restarting gameplay (ambient awareness). Further, we found teens frequently join multiple worlds across different modes concurrently, using the range of devices and audiovisual channels available to them to manage and modulate their level of connection to each. For example, Helen, who we introduced in the opening of this paper, had become adept at Facetiming friends on her phone, while building houses in Roblox and keeping one eye on her muted Zoom class in the background on her computer.

The possibility to be constantly connected, simultaneously to different worlds and across different devices to different degrees of intensity and sociality is made possible through what Couldry and Hepp described as the "new infrastructure of social knowledge" (Couldry and Hepp 2017, 128) that "manifests itself in the extension of information and social interactions across time and space into the singular ever-presence of 'big data'" (Rose 2017). This fundamentally alters the way teens can build and maintain social connections. It gives them the control over how much and how deeply they want to engage with different virtual worlds. It also lets them mix different thinner layers of these worlds with other virtual or physical worlds they engage in simultaneously, enabling teenagers to maintain a feeling of simultaneous connection to multiple social worlds and the identities expressed within them. In this way they can adapt the digital tools they use to their own connection needs and preferences and build personalized connection patterns and habits they can carry into the future.

Teens modify their social selves and personalize their audiences

We’ve explored how teens build, inhabit, and engage with virtual worlds. But how do they enact their social selves in these worlds? Virtual worlds have become spaces for identity performances that are as important as physical spaces. Yet, virtual worlds give teens new tools to modify their social selves and their social audiences in enabling them to mix virtual and physical social audiences according to their preferences.

Physical worlds are limited when it comes to the agency individuals have in performing their social identities in them. According to Erving Goffman, social life is a performance on three stages (Goffman 1990). Individuals' agency during their performances is constrained by rigid settings and boundaries between stages, assigned roles and physical appearances, little control over and knowledge of audiences and internalized norms and expectations for behavior (figure 4). As a result, they limit the ways one can manage the building of social resilience.

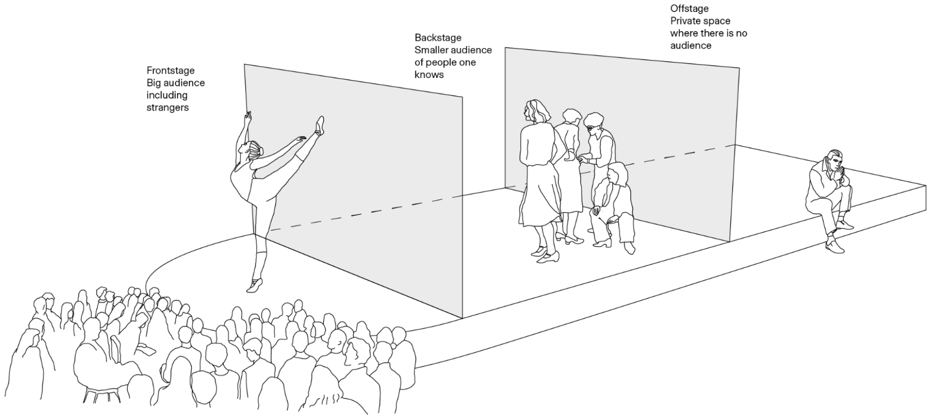

Frontstage
Big audience including strangers
Backstage
Smaller audience of people one knows
Offstage
Private space where there is no audience

Figure 4: Goffman’s model of social life as a performance on three rigid stages.

When building their virtual social selves teens today have control over the “manipulable interfaces with the world” (Ito et al. 2010, 1–28). They are among the first to grow up in a world where Facebook, Instagram and other mobile social media could have been an integrated part of their lives from their earliest living memories. Per Couldry and Hepp “mediated connectivity becomes an operating condition of the child’s imagined world, as well as, later on, its secondary institutions of socialization” (Couldry and Hepp 2017, 340). The teens in our study used technology to personalize and manage their roles and stages (figure 5). In virtual worlds teens do not have to deal with the rigid settings and boundaries between stages and the lack of control over roles Goffman describes in relation to physical worlds. Instead they can create their own back, front and off stages, modify their roles and appearances, control and monitor who is watching, and set up their own norms and behaviors. boyd has previously argued that persistence, searchability, exact copyability, and invisible audiences make it more challenging for teens to create their own space in networked publics (boyd 2007, 7–8). However, we found that teens have become adept at using the affordances of the technologies at their disposal to overcome some of these challenges thereby increasing their capacity to build their social resilience.

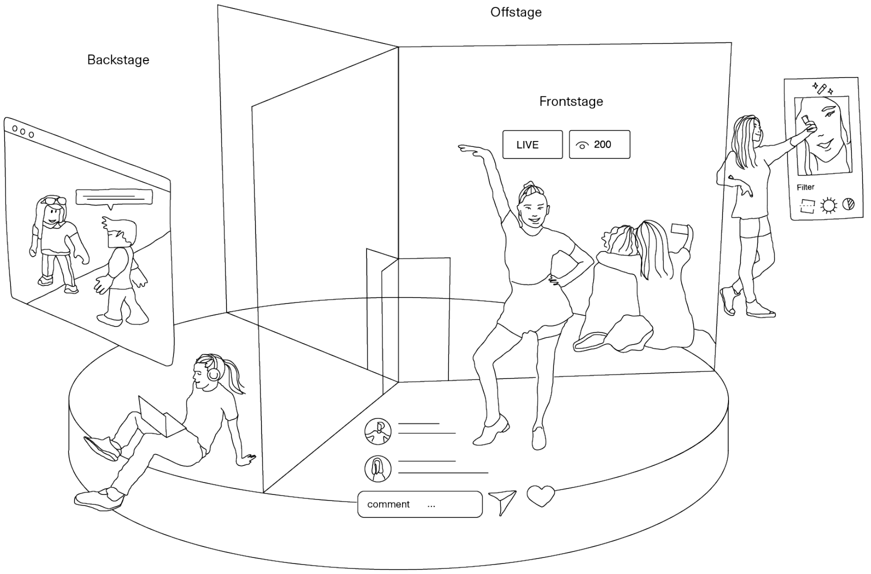


Figure 5: Our model of virtual social lives across variable stages.

One example is Leni from Berlin. She uses all the features of Instagram to set her stages, craft her persona and control and monitor who is watching. She has two private accounts: one that she controls tightly and limits to close friends she knows from her physical world, and one that is more "public" as she allows it to be followed by "virtual" followers she does not know from her physical world. On this more public account she has close to 4000 followers and she posts stylishly posed selfies. On her more private Instagram account she has only 92 followers who are all people she knows personally, mostly friends from school. Here she records and shares funny moments in a more candid style. While the more public private account on Instagram represents a curated view, Leni still uses it in ways that blur the boundaries between the different layers of her selves. She finds it funny to go live on this Instagram account while going to the supermarket to buy groceries with her friends. The sense of where her social world is primarily occurring is elided. The boundaries between the physical retail environment, the private embodied "here" of her using her phone and the public "out there" of the virtual audience becomes blurred (Couldry and Hepp 2017, 208). Virtual worlds thus give Leni the tools to control and define the boundaries between stages and audiences in her social worlds according to what she feels helps her most to grow her social resilience. In that way she can not only determine how she wants to be seen in her present social worlds. She can also build different social selves that she wants to be known and remembered for in the future.

Teens maintain and build social relations through the creation of social artifacts

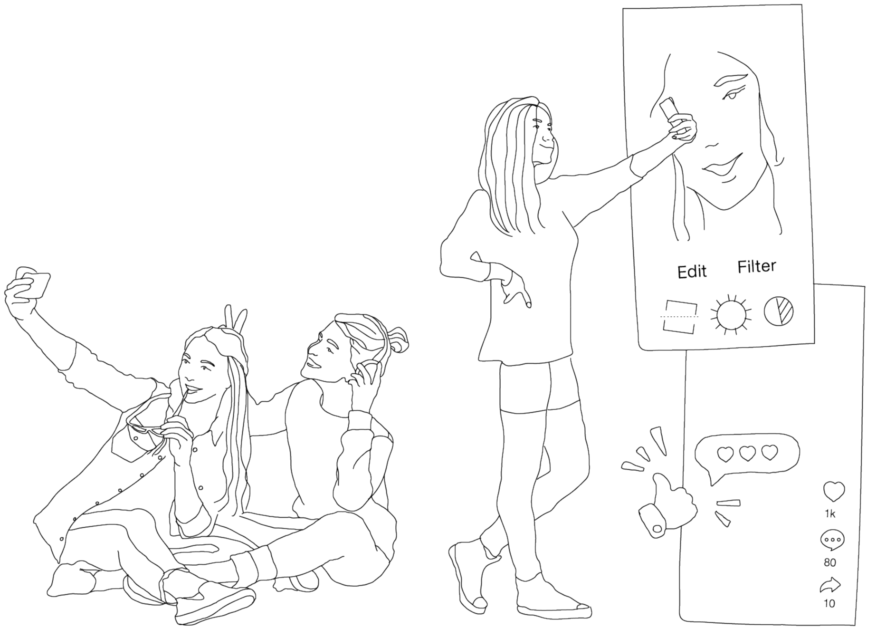


Figure 6: Teens create to connect with others and gain recognition

We found that creating is an essential tool teens use to socialize and build social resilience in their virtual worlds. In contrast to physical worlds, creative content can be produced and shared easily. As a consequence, creative expression through shared content, from quick and casual to skilled and sophisticated, is a central means to build and maintain social connections. Creating shared cultural artifacts enables teenagers to contribute to the (re)production of the social world they engage with (Unruh 1980, 271), first, by connecting with others across physical and virtual spaces during the creation process and, second, by getting social recognition for their creations.

During our fieldwork we found that teens were frequently creating images and videos with their friends as a social activity. We met Layla and Walt, two 14-year-olds based in Berlin. Whenever they get together one of the things they like to do is find dance videos they can copy on Layla's TikTok account. Once they find a dance they like, they search for a version of it on YouTube on a laptop to be able to see the dance more easily on a larger screen so they can copy it. They might spend an hour or two perfecting the routine before recording their own video using the in-built audio sounds on TikTok. When they're happy with the content Layla saves the video to her TikTok drafts. From here she can export it to share on her Instagram Stories, where it will stay up for 24 hours and be visible to her close friends. Layla and Walt's main goal when making these videos is not to have something to share or to participate in TikTok's viral crazes. What they want is to have something to do together, a fun way to spend an afternoon goofing around. Creating content together provides a more immediate and fun way to engage in their shared interests in popular culture.

The focus is on the people and enjoying the process rather than producing artifacts. The sharing of artifacts matters insofar as it fosters what Leisa Reichelt has called ambient intimacy, "being able to keep in touch with people with a level or regularity and intimacy that you wouldn't usually have access to" (Reichelt 2007). As Layla and Walt are both second generation migrants, they value the ability to connect with family who don't live in Berlin. Ephemerality is central to the experience of sharing content. It's about feeling connected to others who aren't present through a shared virtual moment—the sense of connection only feels special if it's fleeting. Intimacy is also reached by creating and sharing "authentic content" that is situated in real everyday life experiences. Layla and Walt record their videos in their neighborhood, often right after school on their way home. Social resilience is strengthened in two ways here. First, creating content with others in the physical world that is to be shared in the virtual world strengthens social connections in the physical world. Secondly, as David Gauntlett has argued, the regular sharing of ordinary fragments of regular life helps teens to establish a close connection with friends in the virtual world who live through similar daily experiences. It allows them to feel closer to people they care about but in whose lives they're not able to participate as closely as they'd like (Gauntlett 2011, 97).

Another form of creation we observed is one that is focused on producing an artifact to share for recognition, eg. social media likes, compliments, or money. The value of this creative activity is only realized when the creator receives recognition for the artifact they have shared. We found that many teens were actively engaged in creating content for social approval on a daily basis. One notable example is Helen. At 14, she was on her third TikTok account, having experimented with different focuses to garner attention and follows. Her latest incarnation was the account run along with four friends from school mentioned in the introduction. Helen enjoyed the process of creating account content with friends. Yet, her main focus was to get enough likes to be able to participate in TikTok's creator programme.

Although an aspect of Helen's activity had an explicitly financial goal, she didn't see herself becoming a creator professionally. Her aim was to find an "easy way" to save money for college. The night before we met she had spent the evening applying for a job at her local sports stadium which she described as "really boring." By contrast, earning money on TikTok wasn't really work, "you just record yourself and get money." Helen exemplifies how seamlessly teen social creation practices have elided the distinctions between work and play, professional and amateur, active production, and passive consumption, and between producers and audiences, outlined by Natalie Collie and Caroline Wilson-Barnao (Collie and Wilson-Barnao 2020). Social resilience is strengthened here as teens can playfully create bonds and feel recognised by peers in virtual worlds when recognition is inaccessible in their present-day physical worlds. Building these bonds through creation in the present lays the foundations of the social worlds (in Helen's case a more playful professional social world) they want to inhabit in the future.

Teens remember virtual pasts and project virtual futures

Finally, a dimension that has been little explored by scholars so far is that virtual worlds not only have a spatial but also a temporal dimension. This enables teens to inhabit virtual worlds across time, to revisit and (sometimes literally) replay past moments from anywhere and at any time and to lay the foundations for future social selves.

Teens in all three countries have built their virtual worlds and identities over time—so they are associated with specific moments in the past that these teens remember and revisit.

Dongdong and Shishi from China created their own videos and screenshots when they played Identity V to "create memories." They shared these artifacts on WeChat to save these moments on platforms where their friends can see them. In Germany, Max and Johan revisited old seasons of Fortnite and the characters they used to play a few years ago to "remember and relive the times we had together during the pandemic". Creating and sharing memories is essential for the reproduction of a social world through the creation and negotiation of a shared understanding of an event that has been experienced together (Fivush and Graci 2017, 269). Revisiting these past virtual events alone or together strengthens social resilience through the building of a shared sense of belonging to a social world.

Teens also used these worlds to project themselves into the future. They were spending hours learning how to use more advanced tools that they perceived to be essential to getting employment in future. We met teens who wanted to become professional coders, illustrators, animators, and music and video artists. Ahmed from Berlin has been struggling with school and dropped out early, now trying to find a job that gives him a good living. He finds it difficult to find a place for himself in traditional professions but has been a keen follower of cryptocurrencies and NFTs. He spends every free moment on Twitter and YouTube to learn about how to trade cryptocurrencies and NFTs. He recently bought NFTs on OpenSea and started investing in cryptocurrencies on Sandbox to realize his entrepreneurial self. As he put it: "I don't like to be told what to do. I can only devote myself to things I'm really interested in. I love the idea of the metaverse and NFTs. It would be great if I could earn a living with it one day!"

They were also more focused on leveraging their online presence to establish networks of people who could connect them to potential employers in future. For example, we met Jordan, a 14-year-old teen who was hoping to get a job coding in future. Since the pandemic he had been attending school remotely, but he'd found himself getting much more interested in programming. Achievements in school had become less meaningful to him than completing a hard coding project. He was using Discord to create a record of all his programming activities in place of a resume to demonstrate his abilities to a future employer. Such creative practices laid the foundations for social resilience in the future, by equipping teens both with the skills and networks to help them achieve their professional aspirations.

All five practices we identified in this research were methods of resilience that teenagers picked up before COVID-19, whose usage they increased, adapted, and intensified in response to the pandemic's undesirable social conditions—isolation from their peers, lack of control over their lives, and the global spreading of an unknown disease—and that they continued to use in their post-pandemic lives. This shows that for teens, living in virtual worlds is far from being a vision in the proximate future. Virtual worlds are already inscribed in their lives and deeply entangled with their physical worlds. They are appropriated in the everyday and integrated with pre-existing social worlds and media. Far from being a clean homogeneous singular world, designed by and brought upon humanity by one tech company, these worlds are messy and multiple. They do not transcend physical devices as a final step in a linear evolution from PC to phone to a full virtual environment navigated with a digital twin. Instead, they are used and shaped, integrated and assembled, inhabited and modified individually as spatial and temporal entities across multiple devices and peripherals, endowing teens with new ways to build their social resilience in the here and now.

CONCLUSION

Through ethnographic storytelling and theoretical analysis, this paper has sought to demonstrate that a resilient future doesn't arrive through predetermined, fixed visions from above but is co-determined by teenagers creatively adapting existing technologies to their shifting social needs in response to everyday challenges. In their adaptations, they developed a more resilient present and future self across physical and virtual spaces. The virtual worlds we observed in our studies enable teenagers to do so in three ways:

First, virtual worlds have emerged as equiprimordial spaces for the building and maintaining of social worlds and social resilience. Virtual and physical worlds are not, as much academic literature says, essentially distinct with one representing and generating real social connections while the other is minor, fake, or at least only an enhancing version of it. Nor are they fantastic worlds of a proximate future teenagers can escape into to forget about their real lives as some tech companies want us to believe. Rather, for teenagers physical and virtual worlds are equiprimordial spaces for building and maintaining social resilience in the here and now. In distinction to traditional electronic media, virtual worlds establish spaces that enable the development of new links between virtual locations and social situations that may be independent of or integrate with physical spaces. Instead of weakening the significance of "place as a determinant of social situation" (Meyrowitz 1985, 122), they create new places that augment and provide alternative and complementary "elements and building blocks from which a sense of the social is constructed" (Couldry and Hepp 2017, 7) enabling teens to intertwine those physical and virtual spaces that are fundamental to their everyday social worlds.

Second, in an "age of deep mediatization", virtual worlds are omnipresent in teenagers' everyday social interactions (Couldry 2012, 162–3). Each virtual world we observed during our fieldwork carried different media cultures across different assembled layers that can be simultaneously linked to, juxtaposed with and detached from actual physical contexts each corresponding to specific social needs users want to fulfill. As such virtual realities are spaces where sociality is co-produced in close relation to the physical spaces their individual users inhabit and across different degrees of immersion. Embedded in the everyday virtual worlds don't substitute but supplement social connections in physical spaces (Woolgar 2002, 17). By creating "an effectively infinite reserve for human action" and social interaction "whose existence changes the possibilities of social organization in space everywhere" (Couldry 2012, 2) they enable teens to transcend the boundaries between fictional and real as well as virtual and physical everyday spaces.

Finally, we found that virtual worlds not only expand present day formal practices of social exchange (Crook and Light 2002). By creatively adapting existing devices, apps and platforms to their needs and preferences, teenagers can also actively lay the foundations for an enduring social resilience and the social worlds they want to inhabit in the future. We thus think that the five behaviors we observed—the building, personalizing and assembling of virtual worlds, the management of the immersion in them, the modification of multiple social selves and their audiences, the engagement in creation to build social connections, and the designing of virtual pasts and futures—are likely to be practices today's teens will carry into their adult lives, becoming essential practices of their and, ultimately, our future social worlds.

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NOTES

1. Rebecca Jablonsky is now a researcher at Google, but this research was conducted while she worked at Intel Corporation. This work does not reflect the views or opinions of Google.

2. PreppyTok is a trend movement mainly on TikTok but also other social media where users share highly curated neat and clean aesthetics ranging from fashion to architecture and tidy working set ups to increase productivity.

3. A similar phenomenon can be observed in the field of artificial intelligence where the so-called "AI effect" frames AI as always being in the future, even if it is already part of our everyday reality (Haenlein and Kaplan 2019).

4. "Original characters" or OCs describe a fictional person or creature created by individuals that does not come from an existing copyright work. It can be part of an original story, comic, or an animated series.

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Beneath the Hype

Self-Ethnography to Explore the Human Possibilities within NFT Technology

JAKE SILVA, *Meta*

This presentation narrates my journey as a skeptical researcher into the emerging world of NFTs. After unexpectedly moving into this much hyped space, I use the resilience that curiosity fosters to overcome my skepticism of it and explore the human possibilities within. Through continuous questioning and learning how to code my own NFT from scratch, I realize their promise as a new medium for unbounded human expression. I then frame this self-discovery as a revelation and triangulate it with examples of NFT artistry captured during fieldwork. Finally, and counterintuitively, I question the veracity of my own revelation and argue that continuous questioning, even of our own work, strengthens our resilience as researchers, so we can better learn, adapt and evolve to confront the unexpected and address the profound questions of our ever-changing world.

Becoming Digitally Resilient

Understanding the Gap between Online Government Services and Low Ability Users

YONI LEFEVRE, *STBY bv*
DOROTA GAZY, *STBY bv*

In the Netherlands, approximately 2.5M people struggle to use technology in their daily life and are unable to use online governmental services independently. People with low digital literacy are increasingly feeling left behind by the digitalisation of society. Even though this group is very diverse, what they have in common is getting stuck at some point when they are in a digital environment e.g. when filling in digital forms.

The Dutch government wants to provide more effective and appropriate help by designing more accessible online services and offering different types of support. To support this, STBY was commissioned to do qualitative research to better understand the experiences of people with limited digital skills. The ethnographic methods used in the project enabled the researchers to get a holistic understanding of participants' experiences of going through this emotional and difficult journey. This personal approach enabled participants to share the 'obstacles' they are confronted with when using digital devices.

Currently, most people with limited digital skills find their own ways of navigating through digital services because they have this intrinsic motivation to function as individuals in society. This research went beyond investigating what a better digital service could look like but it also explores how people might be given appropriate tools and opportunities to be resilient in their own space, and at their own pace, both online and offline. Our research recommended strengthening a network of support that offers more inclusive and diverse help for people with different needs and levels of digital experiences.

Research and Design in Controversial Spaces

STEFANI BACHETTI, *Motorola Solutions*

Research within public safety and law enforcement in America highlights important issues and considerations for designers and researchers. Within this industry exists controversial points of views and high stakes consequences. How do we as researchers balance empathy in spaces where points of views don't just differ, but actively clash? Who should we consider to be our true users within a product life cycle, and how do we ensure we are designing for the future rather than the present state of the world? This PechaKucha surfaces some of the strategies employed by the research and design teams at Motorola Solutions in a holistic effort to navigate these challenges.

Photo credit: Motorola Solutions

Stefani Bachetti is a designer and researcher. She oversees the foundational and generative research practice at Motorola Solutions, which infuses human centered insights into the development of products that support people through their most critical moments. She pursues research with unquestionable depth, rigor, and an optimistically critical eye. On the side, you'll either find her sketchnoting, or in her wood shop building toy cars and kazoos.

CASE STUDY SESSION

Ethnography Leading Social Change across Public and Private Sectors

Corporations increasingly take responsibility for societal change and the mark they leave within the world, demonstrated by how they focus on diversity in advertising or inclusive design practices. Public organizations, by definition, are rooted in a society-based purpose and now look to accelerate digital transformation and innovation. In this session, we learn from four case studies across the public and private sectors that demonstrate ethnography leading the way: creating resilient organizations and resilient futures for the public good. Participate in this session if you are curious about designing better social systems, large-scale implementation of ethnographic methods in public organizations, diversity representation in advertising and technology inclusion for people with hearing impairment.

Curators: Oskar Korkman (*Alice Labs*) and Anni Ojajarvi (*Swanlake*)

How a Government Organisation Evolved to Embrace Ethnographic Methods for Service (and Team) Resilience

The Case of the Canadian Digital Service

MITHULA NAIK, *Canadian Digital Service, Treasury Board Secretariat, Government of Canada*
COLIN MACARTHUR, *Universita' Bocconi*

Government websites and online services are often built with limited input from the people they serve. This approach limits their ability to respond to ever changing needs and contexts. This case study describes a government digital team built from the ground-up to embrace ethnographic methods to make government services more resilient.

The case study begins by tracing the organisation's origins and relationship to other research-driven parts of its government. Then it shows how the organisation's structure evolved as more projects included ethnography. It describes various approaches to locating skilled researchers within bureaucratic confines, as well as what responsibilities researchers took on as the organisation grew. It then summarises researchers' experiences with matrixed, functional and hybrid organisation schemes.

The case study concludes explaining how embracing ethnographic approaches (and values) increased not only online service, but also organisational resilience. Teams who embraced ethnography had deeper and more thoughtful responses to the pandemic, and inclusivity challenges in the organisation. Lessons learned for other organisations attempting to scale an ethnographic research practice, and seize its benefits for resilience.

THE EMERGENCE OF GOVERNMENT DIGITAL SERVICES

Since the early 1990s, governments around the world have invested in digitising public services with the aim of decreasing the cost and increasing the quality of public services for citizens. Yet over this time it has become increasingly clear that digital governments have not delivered all the benefits that were initially hoped for by its users (Mergel 2017). One reason for this shortcoming is a lack of consideration of the needs and behaviours of citizens in the planning, development and delivery of public services. As a response to this gap, several public sector teams have increasingly looked to the toolkits of design thinking and user-centred design to place the citizen "user-experience" at the forefront of public service delivery (Clarke and Craft 2017). And yet, over the past decade, the results have been mixed, with some governments such as the U.K, New Zealand, and Singapore succeeding in their efforts to deliver improved service outcomes more than others (United Nations 2020).

In the Government of Canada, early approaches to introduce user-centred design into the public service largely took the form of embedding design generalists in policy development teams to inform the front-end of policy design. At that period, the skill sets of designers were seen as a toolkit that could help with policy development, rather than as a skill set primarily relevant for service delivery (Michael McGann, Tamas Wells and Emma Blomkamp 2021). In this role, designers led workshops, projects and interventions with an overall aim to build "empathy" amongst public servants towards the needs of the people their policies served. While the expertise introduced fresh thinking and recommendations to increase citizen involvement in early policy planning phases, the outcomes didn't go far

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enough to change the culture of government decision-making to impact day to day citizen-facing service delivery (Hum and Thibaudeau 2019).

The following case study will show how the introduction and evolution of a central digital service unit in the Government of Canada in 2017, Canadian Digital Service (CDS), and its approach to hiring researchers evolved in response to the increasing demand for an ethnographic research lens to improve how government understood the needs of citizens receiving their services online. And in turn, why it also proved to be effective in building team and organisational resilience at a time of unprecedented change in the delivery of urgent online services at the start of the COVID-19 global pandemic.

DESIGN THINKING AND USER-CENTRICITY IN THE GOVERNMENT OF CANADA

The creation of CDS in 2017 was a response to, and equally influenced by, a history of the Canadian public service engaging with digital services and the need for user-centred design that goes back to the early internet era.

As the 2013 Fall Report of the Office of the Auditor General on Access to Online Services ("OAG") shows, when "Government of Canada services began to be migrated online in the late 1990s and early 2000s, Canada was seen as a world leader. Leadership in customer service and efforts in providing its citizens with online offerings were two of the main reasons cited for the government's success" (Office of the Auditor General of Canada 2013). However, the same report goes on to critique the government for losing this early momentum. A later report from the OAG found that one of major reasons for the decline in quality of Canada's digital services was a lack of importance given to the needs of the users of government services. In the words of the report, "It is critical for government departments to understand that their services need to be built around citizens, not process—or they can expect that those services will be disrupted" (Office of the Auditor General of Canada 2016).

The truth of these words was directly felt by public servants themselves in 2016 with the federal government's large-scale and ongoing IT failure of the Phoenix payroll system (May 2022). Amongst the many lessons learned was the lack of testing the new service with real users before its launch. This situation cost the government over $400-million to repay federal public servants as part of continuing compensation for damages, and cost taxpayers more than an estimated one billion dollars, in addition to significantly disrupting the pay of thousands of public servants (May 2022).

Efforts to widen exposure to the citizen experience began a decade earlier. In the 2010s, traditionally siloed government public engagement teams—responsible for consulting and engaging citizens and stakeholders—began improving links across government with the creation of communities of practice. The goal was to renew their ability to be innovative and build a more flexible, knowledgeable member base. It was around the same time that people were looking for inspiration from the growing number of public sector innovation units from other governments such as Denmark's MindLab, U.K's NESTA, and UNDP's Innovation Labs (McGann et al 2018). In particular, how they were able to embed design talent and expertise to expand the traditional public consultation playbook.

Pursuing the promise of social innovation labs, in 2013 a government-wide initiative known as Blueprint 2020 was launched with the aim of public servants "working together with citizens, making smart use of new technologies and achieving the best possible outcomes with efficient, interconnected and nimble processes, structures and systems" by the year 2020 (Privy Council Office 2013). As a result, a series of policy innovation-focused

"Hubs and Labs" were set up to grow the practice of "co-designing" policy and program solutions with citizens and stakeholders and documenting what works to support learning and replication. Outcomes and lessons were subsequently shared at an annual "Innovation Fair" held at the National Capital Region, Ottawa. Examples of government reform projects came from teams including the Privy Council Office's Central Innovation Hub (now Impact and Innovation Unit), Health Canada's iHub, Indigenous Service Canada's Indigenous Policy and Program Innovation Hub, Immigration Refugees and Citizenship Canada's Pier SIX – Service Insights and Experimentation, Canadian Coast Guard Foresight & Innovation Hub and more.

While creating momentum and awareness of the need for a more nimble style of working, the following years proved to show assorted achievements. For many, the scale of their effort was evidently limited to those within the boundaries of the lab, creating an "us versus them" culture of people who seemed privileged to hold a title of being an "creative innovator" and those who continued to to represent an outdated style of working. Another critique discussed the placement of labs as separate entities within an organisation, removed from the day to day pressures facing the organisation's core functions, and therefore removed from the realities of what it takes to create lasting change (Hum and Thibaudeau 2019). Perhaps the most glaring limitation was the disparity between the knowledge and involvement in early-stage policy making versus the practical implementation of the policy with people's lived experience. By virtue of being semi-autonomous entities creating short bursts of co-design projects with sprinkled consultations at the front end of policy making, this resulted in an imbalance in the strategizing around accountability, applicability and implementation of said problems (Barnes 2016).

All the while, the need to increase citizen satisfaction and demonstrate measurable outcomes meant that similar governments were looking to play catch-up to rising expectations of what "digital transformation" could bring for the public sector. The U.K's Government Digital Service showed targeted results in creating efficiencies and meeting client needs (Greenway et al 2018) . Closely followed by the Obama Administration's U.S Digital Service, Australia's Digital Transformation Agency, and Canada's own Ontario Digital Service at the provincial level to lead the strategic implementation of each government's digital agenda (How the Canadian Digital Service Started 2017). Collectively, these efforts proved that the time was right to start exploring what a Canadian approach to digital government could look like.

GROWING THE RESEARCH PRACTICE AT THE CANADIAN DIGITAL SERVICE

The Canadian Digital Service (CDS) was created in 2017 within the central federal department of the Treasury Board of Canada Secretariat to "demonstrate the art of the possible" and build digital capacity for Federal departments (Elvas 2017). Initially founded as a three-year pilot, in 2019, the team received additional funding to deliver government enterprise platform services and continue partnering with departmental teams to increase digital skills and capabilities. In 2020, with the shifted focus to support the federal pandemic response, CDS's budget was doubled and, in 2021, the organisation was established as a permanent federal program (Budget Implementation Act 2021) to scale its impact and reach.

Over CDS's five-year evolution, its approach to embedding research and ethnography evolved over the course of its growth. This process can be broken down into five phases, each bringing its own definition, goals and challenges.

The first phase can be characterised as a "team of one." CDS hired its first – and for over six months, only – researcher, one of this paper's authors, to help bring the team along on how a service can be built based around user needs, not governments. This early phase was lean and scrappy. As in any team of one, the researcher performed several roles—planner, designer, researcher and advocate. And the mission was singular: to begin shifting data and insight generation from a traditional top-down framework to a more ethnographic style, surfacing a bottom-up layer of evidence based on people's experience of government.

The second phase can be described as promotional. Armed with the success of early research engagements with the Department of Veterans Affairs (Ferguson 2018), the Department of Immigration, Refugees and Citizenship Canada (Lorimer, Hillary and Naik, Mithula 2018) and others, the organisation emphasised the value of working in the open and hosted several research-focused meetups and workshops for public service teams. This phase also saw an increase in the hiring of designers, front-end developers and a second researcher to collectively make a user experience team. The challenge now was in balancing the growing interest from partners' in helping unpack bigger research questions with the limited capacity of research on the team.

The third phase personified growth. There was a steady flow of requests to conduct ethnographic research on people's complex relationship to government services including with members of the armed forces, Veterans, newcomers to Canada, low-income taxpayers and disability benefit applicants (Canadian Digital Service 2019). This momentum and progress showed the need for greater craft-based guidance and leadership. Following which, the first research manager, one of this paper's authors, was hired to establish the research team. It was also at this stage that other disciplines such as design and development had grown in size, necessitating an expanded organisation structure. It was here that a matrix-style framework was developed, resulting in the research team reporting to the head of product delivery and researchers reporting to multiple leaders.

The fourth phase saw the maturity of research practice, both in the frequency, breadth and operations. Research was now built into every product phase and the key decision points of product development (Lee 2020). Participant recruitment emphasised the need for diversity in language, literacy, access to technology and disability. Research with end-users was critical, alongside research with public servants administering the service. Shareable artefacts, method toolkits and templates were prioritised to educate and guide people along the process. It was not entirely a surprise then, that the growth in research skills had an inverse relationship to the level of enthusiasm with the fast-paced agile process. Researchers were tired of feeling limited to shipping usability findings when the data was pointing to deeper structural concerns in service design.

And finally, the fifth and current phase represents research's integration to various functions in the organisation. As a result of scaling to over a hundred staff, and in an effort to improve efficiencies, the organisation shifted from a matrix to a divisional organisation structure. One division delivers enterprise platform components for federal teams to adapt and reuse, where the researchers are embedded in product teams. The other unit is a consultancy providing bespoke guidance and coaching to federal teams. Here, the researchers are consulting strategists. In both units, researchers shifted from reporting to a research manager to likely a non-research manager. Researchers were also hired in new places. For example, the platform unit's client experience team brought in researchers to consider the end-to-end client journey. In the consulting unit, the skillsets of researchers were sought across teams.

Transitioning to this new mode of management was not trivial. CDS team members had built up substantial identities around their discipline-specific communities. Senior managers also had to give up managing people just in their discipline, and change their scope of leadership (often stretching their professional skills). Importantly, the research team did not make this switch alone: engineers, designers and product managers all saw the end of their discipline-specific groupings and gained new management. Research "diffused" into the organisation as part of a broader effort that diffused many other job types.

Today's challenge is an obvious one – how will researchers embedded in various parts of the organisation maintain a sense of community, connection and tell a shared story? Is it relevant to do so as one group? Is it more impactful that they leave research crumbs across disciplines and areas of the organisation. The next phases will tell.

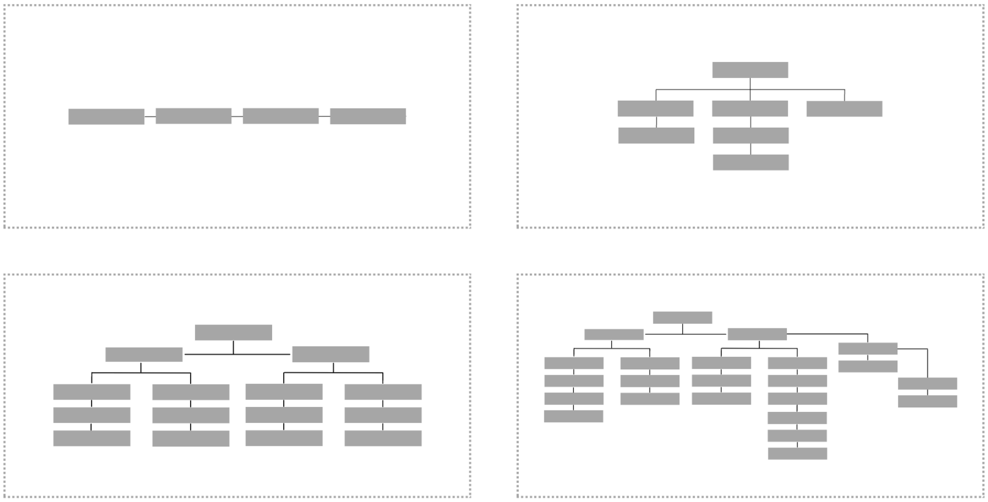

Figure 1. Diagram by Mithula Naik, 2022. Continuous organisational shape-shifting since 2017—from "family-style", to "matrix" to "business units".

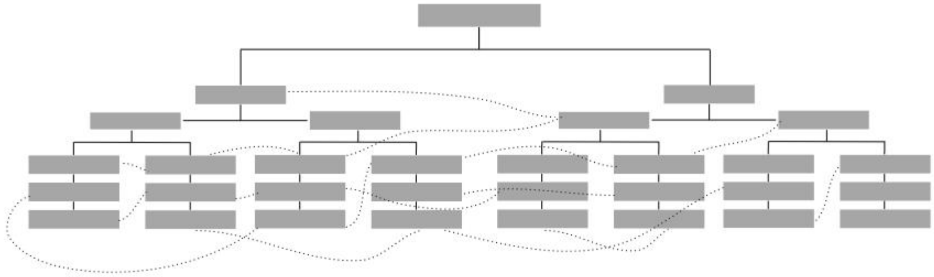

Figure 2. Diagram by Mithula Naik, 2022. In the fifth and current organisational structure, research is integrated into various functions, enabling trails of connection across the organisation.

TENSIONS WITH THE GROWTH AND ADAPTATION OF ETHNOGRAPHIC METHODS AT CDS

As CDS' ethnography practice grew and diffused, it created interesting organisational tensions. Researchers found themselves in conflict with developers, designers and leaders. Overtime, these conflicts fell along predictable lines, and exemplified elements of cultural and epistemological theory from the ethnographic world. The following section details three types of conflict common as CDS progressed. It will provide examples of the conflict, explain them through theory, and offer some perspective on their "usefulness" to the organisation's growth.

Conflict 1: Emic vs. etic perspectives

"Why can't we just call this person what he is – a user?" one developer exclaimed to one of this paper's authors. On one hand, researchers often advocated using the language of users to describe themselves and their activities. On the other hand, developers and product managers tried to apply their own categories to the people at hand. The language of "customers," "users" and "stakeholders" was non-specific, but common in their professional communities. This felt like a conflict between emic and etic perspectives: using the researcher's language and categories versus a users' (Alasuutari 1995). Stepping back from this language is harder for some than others.

With time, the authors of this case study came to see the "word wars" as emblematic of a deeper conflict – one about the perspective taken when trying to describe a group of people. Many CDS team members made sense of their field by developing their own taxonomies and applying them to the subject at hand. In a given situation, they searched for "users" and "providers," "transmitters" and "receivers." Although research interviews challenged them to better understand these peoples' behaviour, it was harder for them to escape the categorization schemes through which they viewed people. These schemes helped bring order to complicated situations, and, to some degree, a bit of comfort in a turbulent environment.

Yet, over time, more and more CDS staff embraced the language of the people their work was serving. With constant campaigning and reminders, the dreaded "user" fell out of favour, replaced by words more specific to the digital product at hand. Software developers, in particular, seemed to realise that their expertise did not hinge on calling people certain words. Rather, those broad categories often obscured the nuances of the people behind the keyboard. Perhaps this indicated that non-researchers seemed more practised taking on the language of others in some basic ways. Indeed, this tension seemed to be a "growing pain" or introducing ethnographic methods to an organisation used to other methods. But as this tension released, others seemed to take its place.

Conflict 2: The time orientation of leaders and researchers

What matters more: A grounded understanding of a project's past? What are the needs now? What is the future vision? These questions of "time orientation" (Seeley 2012) are key elements of culture, but also became key fault lines for project teams. As the organisation grew, many a CDS team became embroiled in internal debate about which of these questions to focus on. Interaction designers tended to focus on sketching visions of the future, product managers became focused on the current state of the project and its tasks. When teams had dedicated researchers, they often became the team historian, trying to trace the journey of the team's thinking (and relationship with users).

Far from being simple prioritisation decisions, these conflicts ran deep and caused substantial tension on teams. People often felt that their time orientation was "right" and forcefully advocated for above others'. Sometimes these debates became matters of professional and personal integrity. Far from a simple attentional choice, they became markers of identity and culture.

Arguably, these tensions still exist at CDS. But as individual roles (like "researcher" or "product manager") faded from prominence, these tensions did too. When people did not identify as a "researcher," they did not seem to feel as committed to maintaining that group's identity by advocating a certain time orientation. Arguably, these debates about time orientation (and other cultural dimensions) were more prominent in times when the organisational structure created specialisations. Unlike the "word wars," this tension seemed levered by organisational choices, championed by managers.

Conflict 3: The epistemological assumptions of developers vs. ethnographers

Underneath both the "word wars" and cultural conflicts, was a deeper schism in assumptions. These conflicts bubble up in questions like "How can you trust research based on only 5 users?" or statements like "These are opinions, but how about the facts." Although these views often came from the organisation's external partners (who were new to the practice), they also came from the "inside": other members of staff sometimes sceptical of researcher's activities.

At the root, many software developers in the organisation were positivists. That is, they believed that with the right measurement tools (website analytics, experiments, software), CDS could discover a singular truth about what users needed. As one developer once told one of the authors, "I want to build a simulation which will show us the single right way to design this website for all of the people."

On the other hand, the growing group of ethnographic researchers had a more complicated relationship with "the truth." They advocated uncovering layers of details and additional complications, instead of simplifying a group into a single statement of their needs. Although some researchers would describe their work as trying to show "reality," very few of them would use phrases like "find the single truth."

Although the authors did not describe it this way at the time, these conflicts are ultimately epistemological ones: core disagreements about valid ways to produce knowledge. Ladner (2016) describes these conflicts in her seminal work on workplace biography: ethnographic practitioners sometimes come into contact with more "factist" colleagues, who struggle to make sense of this different approach to research.

But beyond spawning squabbles, what did this (and other) ethnography-induced tension do to CDS as a group? These three tensions could be summarised as "the culture of professional ethnography" meets "the culture of progressive software development." One focused on using pre-existing categories, the other trying to use new categories. One focused on questions of the past, the other on the future. One interpretivist, one positivist.

Like members of any two cultures coming into contact, CDS staff had a variety of reactions. Some seemed to further retreat into their ways of being and knowing, displaying less interest in others as time went on. Others became boundary actors, adept at speaking the language (and explaining the methods) of people on different sides. They engaged in a kind of "code switching" that enabled them to work across these boundaries.

Interestingly, people who were adept at bridging researcher and developer culture, were also good at opening and navigating other identity-involved discussions. When the murder of George Floyd opened discussions into intersectional oppression in Canada (as well as the U.S.), researchers and their advocates were active participants. They seemed able to consider different ways of seeing and knowing. Perhaps this generalisation of ethnographic ways of seeing and knowing (at least among some staff) is even more valuable than using an ethnographic toolkit to improve software.

THE FUTURE OF CDS AND ETHNOGRAPHY WITHIN IT

Despite (or perhaps with the help of) the tensions of ethnography, Canada's digital service team continues to become further institutionalised. CDS recently received additional funding, as well as permission to hire permanent staff. Several CDS products gained wide- and large-scale adoption. The organisation's role within its home department also seems increasingly stable: new top-level executives have come and gone and CDS remains. And although CDS retains several original team members, many of its key staff have also come and gone, creating turnover across all teams, including researchers.

CDS retains a core group of researchers with an ethnographic-bent. Although they are now scattered around the organisation (in the "divisional model" described above), they retain influence over products in the organisation. Divisional leaders have chosen to hire researchers (even if they are not researchers themselves). CDS, and its commitment to ethnographic methods, seem here to stay.

IN CONCLUSION: LESSONS LEARNED FOR OTHER ORGANISATIONS

What are the lessons learned for others attempting to implement ethnography throughout an organisation? Although the particulars of Canadian government, public interest technology and CDS' particular staff make it difficult to generalise, the authors note:

Organisations rolling out ethnographic methods broadly should prepare for deeper conversations about epistemology. Our experience suggests that rolling out procedures and approaches alone does not yield the impact organisations hope for. The philosophical basis of ethnography matters, and CDS might have been better served by deliberately introducing it to the organisation.

Organisations hiring teams of ethnographers (or ethnographically-influenced researchers) should actively prepare for the culture they will bring. Professions are not simply sets of practices; they're a whole set of cultural practices and rituals. Leaders trying to bring these people into an organisation should expect not only disagreements about methods, but about basic vocabulary and cultural orientation.

Organisations hiring ethnographers should also attempt to set their expectations appropriately. One of the beauties of ethnographic methods is their tendency to help people zoom out, and grasp many different nuances of a problem. But within a government service (and likely other bureaucratic organisations), even if you grasp all the elements of the problem, you may only be able to fix one or two. As ethnographic views hit government realities, CDS management could have down-adjusted expectations. You can change government to serve people better; but you can't change all of government, to serve all the people, all at once.

Most importantly, introducing ethnographic methods at CDS helped both researchers and non-researchers think more flexibly. Exploring different ways of speaking, and different ways of knowing, enabled the team to produce impactful services. It also enabled the team to adapt to changing conversations and world conditions. In other words, the tensions were not only worth it – they were part of what made the change worthwhile.

What organisational model works the best? How would we recommend other organisations? In true ethnographic fashion, we do not conclude with an obvious recommendation for others embarking on a similar journey. We have shown the myriad, organisation-specific factors that drove CDS' evolution. Instead of making a blanket recommendation, we suggest other researchers examine the details of their organisations and ask themselves: what problem can a new structure solve? And how?

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Designing and Envisioning a More Resilient Social System

How to Start from What's Good to Create Something Better in Public Services

SOFIA CARVALHO, *With Company*

Segurança Social (Portugal's Social Security System) offers multiple service channels to the people. However, they were not perceived as a whole because the assistance was not standard, depending on the channel or person answering—leading to cumulative problems that could take months to resolve.
We faced the complex nature of a big governmental organization. Our research made us more aware of people's general reluctance towards public institutions as they tend to expect poor quality service. We used the information from field research to create four prototypes that would bring tangible results to citizens and impact the institution's culture in the long term.

Segurança Social has always been about resilience: the organization itself and the people it serves. Despite its flaws and fragilities, it's the social system that allows many to thrive. That's why we envisioned the system's sustainability, rooted in the workers' resilience and processes.

Keywords: Public Services, Digital Transformation, Organisational Impact, Systemic Design, Transformative Design, Resilience

INTRODUCTION

Project Setup

Allow us to start by telling you a bit about us as we believe our way of doing things plays a big part in our client's projects success. We are With Company a transformative design company that blends strategy and innovation through a systemic approach to create a positive impact with each project—no matter its nature. From strategic branding to the shaping of cultures, from in-depth research to service design; we pair an optimistic mindset and critical thinking, to generate insights and back up our strategies designing solutions around non-closed answers. We rely on multidisciplinary teams to deliver outputs that future-proof small businesses, governmental organizations, and mindsets.

The project here presented, required us to work in the fields of ethnographic research, strategy, service, and digital transformation. To address the challenge, we gathered a multidisciplinary team composed of one researcher (with a background in psychology and social reintegration), one multidisciplinary designer (with a background in education and experience volunteering in social work), and one service designer with a focus on innovation. Leading the project, we had a project lead focused on UX, service, and strategy and the supervision of a senior service/strategic designer.

Our client—the Portuguese Social Security, constitutes Portugal's national social security system and aims to ensure universal rights, equal opportunity, well-being, and social cohesion for all Portuguese and foreign citizens who exercise a profession or reside in Portugal. Thus, part of the dependent, self-employed or legal person's income (contributions) is collected to create a community reserve. This fund is valid for situations of unemployment, pension reforms, guaranteed minimum wage, family benefits, health care, and other social benefits.

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We were working with the board of Directors, and the departments of the Communication and Client Management Department, the Benefits and Contributions Department, and the Information Analysis and Management Department). We've collaborated with six delegates from these areas that helped unlock roadblocks, smoothing things in the field and providing valuable inside knowledge and context to the problems we were tackling.

On a local level, we collaborated with Beja and Setúbal District Centers, conducting ethnographic research and working closely with several departments to implement and validate our prototypes. We've involved more than 200 employees across varied hierarchical levels.

Context

Segurança Social (Portugal's Social Security System) offers multiple service channels, and there is an effort to become more digital. Yet, the services are not perceived as a whole because the assistance is not standard, leading to cumulative problems that could take months to resolve.

Root Problem

To better illustrate one of the main pain points we identified in the services, we will share the interaction of a persona we named Salvador. Salvador has been unemployed for the past two months, but he just got a job offer and needs to suspend his unemployment benefits.

As so, he goes to the local services and submits the required paperwork. The font-office technician working that day informs him that they (front-office) need to send the documentation to the back office for validation as those are the only workers with autonomy to complete the request. Although the process could be concluded with a few clicks, Salvador realizes it may, in fact, take some time.

Several days go by, and Salvador gets closer to his first day at work and worries about his affairs with the Social Security not being in order. Trying to find some answers and peace of mind, he logs into Segurança Social Directa (the social security platform for citizens), hoping to see the status of his process, but finds no information. Worried about the timing, Salvador looks for a direct email address and sends one. He is not aware that due to covid-19, the organization receives thousands of emails a day, and it can take up to a couple of months to get a reply. Most Citizens who don't receive an immediate response send more emails, overloading the mailbox.

Needless to say, Salvador didn't get an immediate reply either, so he called the contact center. The worker in line can't access his records and therefore can not tell him the status of his process, leaving and suggesting that he goes back to his local service or wait for a formal reply by mail. Salvador feels powerless waiting and goes back to the local service, where he files a new request.

Salvador's story illustrates how citizens choose the channels according to the urgency and expectations they have about them, creating multiple contacts and requests for the same issue. To solve a problem or anticipate an answer, citizens try all accessible channels as often as needed until they get a solution that answers their needs.

As you can see from this history, this type of situation directly impacts citizens' life but also undercovers how it affects internal teams and processes, creating more problems and delays in the future.

The challenge

Our challenge was posed as: how can we increase the resolution of citizens' requests in one contact? How might we increase the capacity to solve requests promptly, map situations that compromise or delay citizens' service, and ensure consistency in responses?

Our client offers multiple service channels to the people. However, they were not perceived as a whole because the assistance was not standard—depending on the channel or person answering, leading to cumulative problems that could take months to resolve. Our challenge was straightforward: how can we increase the resolutions in the first contact?

If you remember Salvador's story, you did not forget that citizens interacted with multiple contact points before solving their situations. First contact means that a request from a citizen would be solved at first contact, either by the front-office worker or by citizens being able to find all the information needed to solve it on their own.

Some requests were solved directly by the front-office attendant, but most had to be sent to a particular back-office department to be analyzed, delaying its resolution. Additionally, some actions that front-office workers could solve weren't currently being done. Our mission was to increase the number of actions performed by front office workers while improving citizens' satisfaction. We mapped current actions and asked: If they could be solved at first contact, why weren't they? What improvements could we make? How could other actions be transferred from back to front office?

We broaden the scope of the initial problem by looking at the organization as a layered and complex system instead of focusing only on the first layer of the problem (citizens requests taking too long to be resolved) . Our research started from the notion that public institutions are ecosystems that live and co-live within different realities. Despite serving the same purpose, the different branches of the organizations are influenced by factors such as culture, location, community and resources. All those layers play a part and by having an holistic approach we were able to figure and point out how to build a sustainable, more resilient, and proactive social system through collaborative actions.

RESEARCH

Target

As a public organization present throughout the Portuguese citizens' life-cycle—and foreigners living/ working in the country, we saw society as a potential target. Internally, the project outcome would also impact everyone.

Focused on main goals, we narrowed the targets and extracted two main targets:

— Citizens who need to complete an action visit one or multiple service sites (in-person or remotely via e-mail, phone, or digital tools).

— Technicians (front and back office) who handle citizens' requests.

Approach & Methodologies

We've developed a professional service design project composed of two parts: the first focused on an ethnographic study of the organization and its target users (employees and citizens). Second, we used collaboration and co-creation to transform research insights into prototypes. Using a Service Innovation Process (Ojasalo, 2015), we went from sensing to seizing change in only five months.

By starting the project with an immersive kick-off week and the organization's project team, our goal was to dive deep into the institution's culture and map key processes and services.

We led the project with research at its core, involving internal and external stakeholders. That allowed us to understand how Customer Service works and the different touchpoints between citizens and organizations, looking at current actions from different angles. We mapped Service Blueprints for the key processes and services.

We looked forward to understanding how the organization was structured, focusing on action support. We quickly gathered that there was much to uncover behind culture, behaviors, and systems in practice. We brainstormed research hypotheses to explore during ethnographic research. Immersive field practice was in dire need.

We used qualitative and ethnographic research methods to explore the problem from different perspectives. We did in-depth interviews (nine with front and back office technicians on the field, plus 16 interviews and user testing with citizens), learning the needs, stories, and relationships people have with social support. We made participatory and non-participatory observations—visiting six services, encompassing 1238 km traveled—to witness how workers manage requests and learn about how citizens experienced the service. We immersed ourselves in the context by answering almost 100 phone calls in the contact center. We used mobile ethnography so that employees would document their daily experiences, and we've interacted with more than 200 internal workers through observation, quick interviews, and research probes. As for quantitative research, we did two surveys for the organization's employees (+1000 replies),and citizens (+350 answers).

A statement that rose during the kick-off was the ambition of looking at this public institution as and industrial or commercial company. With this in mind, we used the Ishikawa diagram (Ishikawa, Loftus 2015)—often utilized in the engineering and industrial sector. We mapped the event's causes and outlined the different steps in the process. We categorized current blockers under seven categories (Resources; Personal Beliefs; Systems; Internal Processes; Information; Organizational Culture; Citizens) and used abstract laddering to comprehend the root problems and their underlying connections.

Key Insights

— Design vs Reality: some departments have fewer resources than needed to follow up on processes as envisioned;

— Pressure from citizens in line can have a significant impact on the workers' performance and the service provided;

— Allocated time for tasks are often short and doesn't contemplate abnormal situations;

— Time for learning and staying up to date is meager and overlaps with opening hours;

— Numerous things depend on the coordinators, who need to juggle between responsibilities and local services;

— Many problems are born internally from good intentions: some measures and guidelines aimed to solve something urgent or temporary end up causing friction in the long term.

We established a new paradigm for action and what it means to solve it in one contact. To handle requests in one contact, we understood we needed to facilitate the involvement of decision-makers without adding an overload to the front-office workers.

To improve "resolution at first contact," we had to address this problem quickly. We understood that some blockers categories were more actionable than others. Therefore we applied some insights uncovered during the research:

— Resources: External dependencies (technological, financial, or human) are not easily actionable;
— Personal beliefs: There are many ingrained habits and individual behaviors that are difficult to change in the short term (generational factors);
— Systems: Initiatives that seek to revolutionize computer systems tend to be limited in their scalability due to the limitations of the systems (requires an infrastructure change);

We decided to focus on the dimensions of problems that are more actionable. We were left with four categories: Internal Processes; Information; Organizational Culture; and Citizens. Because there were still many issues to address, we added a filter based on a key insight. As stated in the key findings, 50% of problems originated internally—solving issues on the go but not addressing the root problem. We committed to identifying internal issues and their direct repercussions on citizens.

We matched our personas with the critical blockers to understand the impact of solving internal issues on an eclectic group of citizens, potentially triggering systemic change. Our aim was to prototype solutions that brought tangible results to citizens with a long-term impact on the institution's culture.

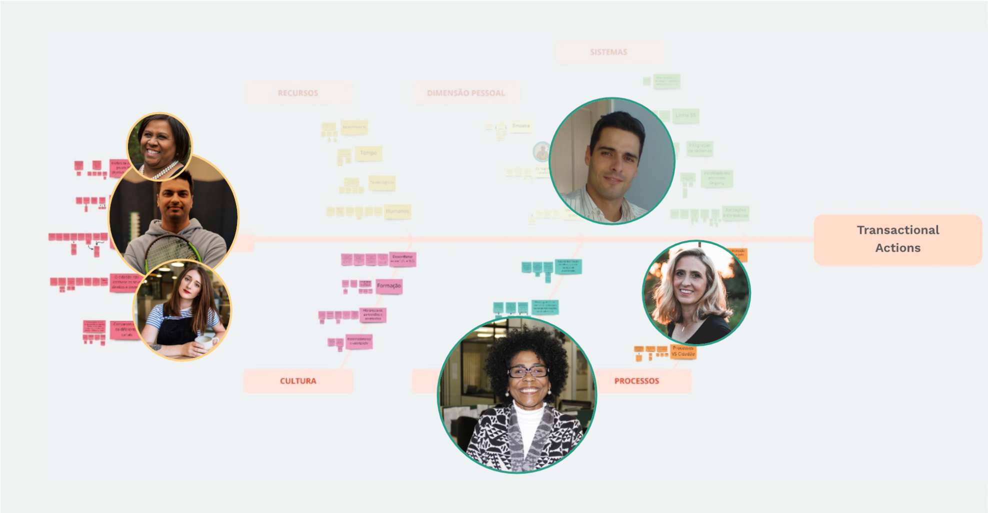


Figure 1. Personas matched with problems identified to understand potential for areas of impact: Graphics © With Company, used with permission.

STRATEGY & VISION

Building Trust: A two-way phenomenon

We started from these insights to design a proactive system instead of the current reactive one: a system where Segurança Social is attentive to society's changes and needs and proactively offers solutions to cover those needs. A proactive approach will also consider the bigger picture and the ultimate goal of ensuring the system's sustainability.

We saw it as crucial to lay the foundations to build a long-term relationship of trust on both ends—social security is present throughout a person's life, although often not perceived that way by citizens. On the other hand, the contributions partly ensure the system's viability.

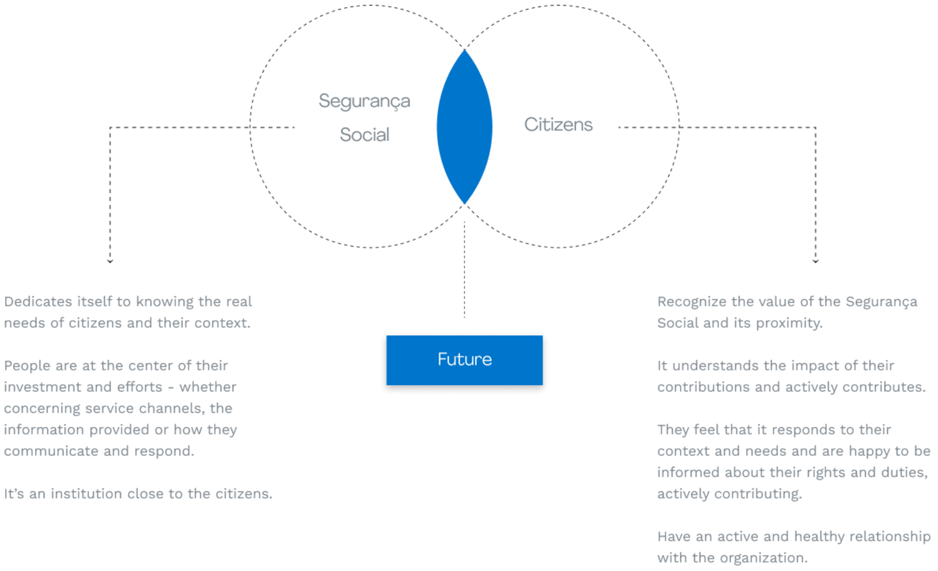
The path toward the institution's sustainable future is a two-way road. It's not enough to create actions on the Social Security side, whose primary objective is to collect contributions. It's essential to cement healthy, active, and voluntary relationships between citizens and the system, with trust on both ends.

To promote the institution's sustainable future, it must diversify and supplement income sources—it's not enough to respond to crises and collect contributions. The report "Pensions at Glance" (OECD, 2021) praises the Portuguese early-pension model but warns of "an additional correction [to the pension age adjustment] to respond to changes in the size of the population that contributes to the system [active population]."

Considering a negative natural balance, it's not only pensions that might be at risk. A long-term strategy is needed when it comes to social responses.

While designing a strategic path for this future, we envision opportunities for the organization to map, anticipate and respond to the citizens' needs. By providing them with a value framework, citizens will also acknowledge the value of Segurança Social and the impact of their contributions to the system. That clouts an opportunity to change the way citizens perceive the services.

We were determined not only to tackle the problem we were first presented with but to start from there and envision the future of the social system alongside the people in the field. We used that vision as a strategy to craft and backup each prototype we delivered, and we believe that was vital to its success.



Dedicates itself to knowing the real needs of citizens and their context.

People are at the center of their investment and efforts - whether concerning service channels, the information provided or how they communicate and respond.

It's an institution close to the citizens.

Recognize the value of the Segurança Social and its proximity.

It understands the impact of their contributions and actively contributes.

They feel that it responds to their context and needs and are happy to be informed about their rights and duties, actively contributing.

Have an active and healthy relationship with the organization.

Figure 2. A two-way strategy towards sustainability: Graphics © With Company, used with permission.

OUTPUTS & OUTCOMES

Delivering solutions with space to grow

We led two prototype cycles for three weeks with interviews and user testing (internal participants/citizens), iterating solutions between cycles. After the last one, we iterated all solutions and designed recommendations and roadmaps for further development.

For citizens, we developed solutions that speak to their needs and help them acknowledge the institution's importance throughout their lives. Both solutions consider specific struggles and opportunities in the users' journey, benefits citizens, and reduce the number of requests, as users can now find information and act independently.

- **Independent workers' chatbot**
  Independent workers interact with the organization regularly, but those interactions often raise tension and doubts. We developed a chatbot that answers the most common questions.

  Aftermath: Our chatbot prototype worked as a basis for the now implemented version on the organization's website.

- **A visual guide for parenthood**
  Understanding information regarding rights and duties should be straightforward, and that is especially important when life changes (e.g., new family member). We developed a visual and interactive guide that practically helps parents understand

their rights.

Aftermath: The guide deployed as a pilot on their website and worked as a foundation to enable workers to design solutions for analogous situations.

Internally, we focused on creating easy-to-set-up solutions that worked during the prototype phase and would significantly impact the organizations and citizens. Our solutions focused on collaboration and knowledge sharing.

- **Enabling best practices**

  Across the country, we found countless strategies developed by workers applied daily. We created a channel to share good practices between departments, local services, or districts.

  Aftermath: Internal teams have analyzed best practices for implementation nationwide when applicable.

- **Service support channel**

  To solve requests in one contact, we needed to narrow the span between attendants and back-office without overloading any side. We prototyped a direct channel between the front and back offices, allowing them to solve requests while assisting a citizen.

  Aftermath: The support channel became an official pilot rebranded as "Resposta Agora" (Reply On-Demand), aiming to implement nationwide.

AFTERMATH

Impact and results

The impact was easily measurable during validation. Before, only back-office technicians could only perform these actions, which could never be solved in the first contact, making the baseline stand at zero. The number of first-contact resolutions reached 90% of the cases—the other 10% would be contacted by the service until the end of the day. Now, citizens can see their problems solved as quickly as in one minute—a record registered in several services. Workers actively suggested the addition of new actions. We started with 13 actions and now stand at 50.

In October 2021, we broadened participation to everyone in Setúbal and Beja (new district). In January, the number of actions expanded (50), and in Spring 2022, Segurança Social extended the pilot project to three new districts – Bragança, Coimbra, and Évora.

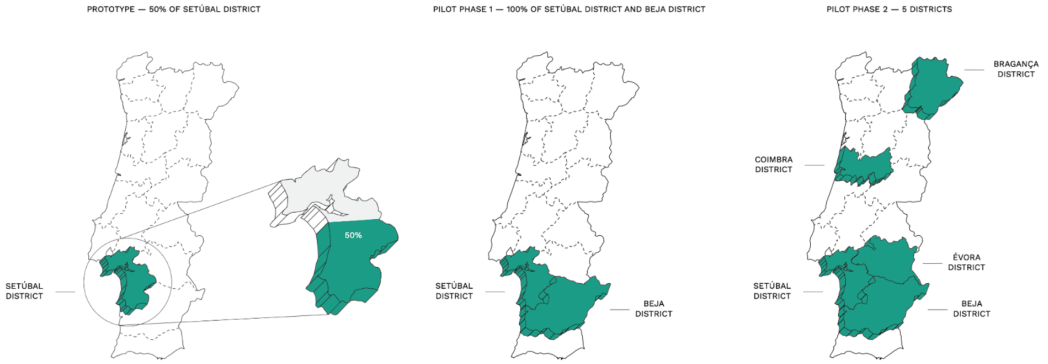


Figure 3. Pilot Expansion: Illustration © With Company, used with permission.

After the validation, we delivered a report with recommendations plus an implementation roadmap. Several were put to practice enabling a global 79% success rate for requests resolved under 15 minutes, 88% up to 30 minutes, with all requests solved in hours (data from January 2022). Ultimately the goal is to answer 90% of the requests in under 15 minutes, with a continuous growth.

Organizational Impact

During validation, we identified a positive influence in satisfaction reports from participants and citizens. Qualitatively, participants saw this initiative as one that impacted their daily work and the citizen's satisfaction.

As stated by a participant when asked how the new channel (and tasks) impacted their workflow: "If it makes Segurança Social more effective in responding to citizens, then it is more valuable for us. It gives us satisfaction to know that the beneficiary had an immediate response in such a simple situation."

Front and back-office worked in closed (digital) quarters, developing the feeling of belonging and mutually helping to focus on a common purpose. We saw an organic hype around the solution and highlighted its potential among employees. Peer-to-peer recommendations helped promote the initiative and eased the expansion of the pilot nationwide.

Our participatory research, co-creation approach with internal players and immersion within the institution revealed their willingness to keep developing the pilots. It also confirmed the importance of service design practices and the collaboration of diverse stakeholders in the field.

The relationship with the client was not a formality but a thoughtful process. We went beyond and above the initial objectives by looking at Segurança Social as a layered system—considering the different realities and dynamics within the organization. That made us understand and point out how to build a sustainable, resilient, and proactive organizational culture through collaboration. As stated by the client at the end of the project, "By engaging and conducting research and co-creation activities within different layers of the organization, the team could find impactful insights that shaped the project outcomes and organizational culture."

FINAL THOUGHTS

Aware of people's general reluctance toward public institutions (Bhattacharyya, 2020)—an intuition validated by research, we turned insights into the stepping stone toward a more resilient system. We expanded the scope of the challenge—by envisioning a sustainable future, diving deep into the needs of citizens, workers, and the sustainability of social systems. According to the client team, [the project] "has allowed our customer service to achieve new levels of efficiency and client satisfaction by using new and more effective forms of digital communication."

Besides key deliverables, we presented a vision using strategic foresight tools such as backcasting, scenarios, and future cones. We aimed to plant a sustainable roadmap mindset within the organization, so we interpolate the future from the outcome we want to create and back to where we are now to define the values and actions to happen in the meantime. This vision works as a guiding star for the organization's future endeavors.

Facing the complex nature of this type of organization, we had to work both with and for internal/ citizens for the project's success, creating bridges without overloading internal teams.

We've rushed to create tailored solutions from scratch in past projects. Developing new tools can seem an obvious solution for clients, providers, and end-users. For the first, it leads to the promise of modernization and fresh design; for designers, it expands the limits of creativity and experimentation, pushing the solution closer to the user's most authentic needs (and ranking pleasingly high during validation).

However, we've learned from experience with the public sector that moving from validated prototypes to implemented solutions can be slow, expensive, run out of resources, and sometimes just not possible.

— With those learnings in mind, we designed the prototypes using the platforms that workers were comfortable with—technology was the enabler, not the goal. We believe that was key to the positive impact of the project.

— Instead of creating a tool for inquiries and communication, we used Microsoft Teams to create a channel for front and back-office workers;

— Instead of creating a new website to communicate, we've prototyped an editable PDF with easy and customizable visuals (plus a Figma workshop and support as the team edited the final content).

— Instead of developing a chatbot from scratch, we've focused on clarifying its decision tree and iterating and validating the process using a simple tool for conversational interfaces using Typeform.

— These tools might not be 100% polished on the first take. Still, we believe that digital transformation is more about adapting to users' behavior changes and culture than implementing fast-paced technology.

A project's success can be determined by how well you convey your learnings. In the final presentation, we brought key learnings to grow research in the public sector. We showed how using those tools can promote cultural change in an industry desperately craving innovation but still behind on using/ implementing ethnographic methods.

Still, we believe it's fundamental to use collaborative research practices to collect and distribute insights to the organization. We proved the value of this approach by successfully implementing ethnographic research methods in collaboration with the workers. It's crucial to transform research into actionable solutions that drink from the findings, creating real change, cycling back to the added value of research-informed decisions.

When the project ended, the client team had acquired the right tools and mindset for a new approach to running projects, evolving internal players, and making them part of the solution.

With the project being approached with an ethnographic mindset, the client had the will and tools to keep the pilots alive and flourishing. After our contributions to the project, the client team used methods such as interviews, observations, and collaborative feedback to iterate and launch new projects and solutions.

They led the transformation of our prototypes into national pilots and went through scaling, validating, and iterating the solutions.

Embodied Resilience

Social Security has been increasingly active in responding to economic, work, and social crises in recent years.

The response to the pandemic was a stress test and an example of the capacity to respond to an unpredictable event that quickly destabilized the normal functioning of Social Security. It was necessary to introduce emergency benefits on health and support measures for work, family, and social protection. Between March 2020 and October 2021, Segurança Social spent almost 4 million euros on emergency measures (I.S.S—Instituto da Segurança Social, 2021).

Still, the response is often seen as incapable of answering societal needs, especially when we talk about disruptive events, extreme cases, or outside the norm: "(...) In COVID-19, we face a unique existential threat for which our social, economic, and political systems are woefully unprepared(...) now so desperately needed both to contain the spread of the virus and to treat those affected by it." (Blakeley, 2020)

Social Security needs a large structure to respond to all social dynamics. However, this compromises its adaptability and makes the organization subject to weaknesses in times of crisis, weakening its ability to respond to recurring problems and maintain long-term sustainability.

We envisioned the system's sustainability, rooted in the workers' resilience and processes. We increased the response to the people not by focusing only on that one problem we were presented with but by making the connections mentioned above and working from what was positive to build a better and more viable future.

The organization has always applied resilience—to itself and the people it serves. It withstood an unprecedented health crisis that led to another economic one. We were constantly reminded that despite its fragilities, it's the social system that allows many to thrive, providing means that represent a real chance to change one's social conditions and life.

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Dismantling Stereotypes

Taking an Inside-Out Perspective to Building Better Representation in Advertising for Unilever

STEPHANIE BARRETT, *Quantum Consumer Solutions*
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Equality, inclusion, and representation are increasingly acknowledged as core tenets of prosperous countries, cities, and organizations. We know that equality is essential, and we also know equality must be enacted on all fronts. Brands and other social organizations are increasingly recognizing their role as social stakeholders, committed to building a society in which both people and their businesses can thrive in the long-term. Quantum Consumer Solutions and Unilever have partnered on this program of four projects to understand and reduce stereotypes and improve representation. We used a mixed-methods approach, including semiotics, qualitative research, expert interviews, springboards, and internal organizational change to improve inclusivity in communications, pack, and products. Readers can expect to learn why we recommend an 'inside-out' approach that combines organizational change with external initiatives, why we need to approach change from a place of complexity and why we need to bring multiple perspectives to cultural change.

BACKGROUND

Resilient societies are those in which everyone can thrive. In addition to being a moral good, equality strengthens economies (Kabeer & Natali, 2013). Increasing equality is therefore central to the idea of increasing resilience. The *Unstereotype Initiative* demonstrates Unilever's commitment to resilience: evolving to better reflect the society of tomorrow through improving inclusivity in communications, pack, and products.

Adverts are often considered through a business lens; however, they are a powerful medium in which diversity, equality and inclusion can be enacted – or ignored. Adverts are part of culture and shape our identities through the stereotypes they communicate. Unfortunately, adverts do not always represent people well. Despite global increases in life-expectancy, only 6% of adverts feature people aged 65+ (Kantar, 2021). Across the world, 5% of people identify as LGBTQIA+, but only 1% of adverts feature explicitly gay or lesbian characters (Kantar, 2021). The same is true for the disabled; only 1% of adverts show disabled people, despite 15% of the world's population having a form of disability (Kantar, 2021). This issue goes beyond mere representation, with broad-ranging and sometimes insidious stereotypes appearing across advertising – broadcasting unspoken messages about how people should look, think, and behave. This phenomenon is well-known in some areas, such as the over-representation of women in laundry advertising (Kantar, 2019). However, there are other, subtler depictions of power, aspiration and norms that send equally reductive messages around, for example, the life a grandparent might hope for or the value they might offer to society. As a result of these stereotypes, three-quarters of people think adverts are out of touch in the way they portray people and there is increasing pressure to change (Kantar, 2019). The Advertising Standards Authority (ASA) found that many people believe harmful stereotypes in adverts reinforce prejudice and can trigger past traumas (ASA, 2022).

Organizations have a responsibility to represent people ethically in adverts, in addition to providing products that meet a broad, inclusive, and representative set of needs. Poorly designed products create smaller and more challenging worlds for people with disabilities. In terms of communications, research proves stereotypes lead to harms such as stereotype-confirming behavior and reduced self-concept (Wheeler et al, 2001; Ertl et al., 2017). Put

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simply, people conform to the expectations the world has for them. Addressing advertising is an important aspect of addressing stereotypes at large. Adverts are fast-moving, attention-grabbing, and loud. Consumer products furnish the worlds in which we live. We must be mindful of the messages these products and adverts are communicating, both explicitly and implicitly. We must implement guardrails to ensure they are an active part of shaping a fairer and more equal future.

WHY UNSTEREOTYPE?

As a multinational company, Unilever have a significant role to play in their approach to commissioning advertising. As such, Unilever committed itself to creating positive representations of marginalized groups, through the cross-industry *Unstereotype Alliance* and its internal *Unstereotype Initiative* (Unilever, 2017; Unilever, 2016). Unilever have been developing this initiative since 2016, launching *Act 2 Unstereotype* in 2021 as part of a renewed commitment to systemic change and end-to-end inclusivity in marketing (Unilever, 2021b). Across the last three years, Quantum and Unilever have partnered to better understand stereotypes and how best to reduce them.

Throughout this case study, we will cover four projects which offer a snapshot into Unilever's multi-pronged approach to reducing stereotypes across multiple markets. We will highlight three tensions in representation and inclusivity, which this program of work successfully addressed to deliver sustained impact, build deep understanding, and grow fairer, more equitable and more resilient social ecosystems.

TENSIONS IN REPRESENTATION

Tension One: How Do You Speak to The Culture That Exists While Creating a More Inclusive Future?

It is important to apply cultural nuance to inclusion. We did this in three ways:

1. Through applied semiotics. Semiotics allow us to decode the unspoken and subconscious codes that frame the cultural context of stereotypes, so we can recode them in a culturally relevant and progressive way.

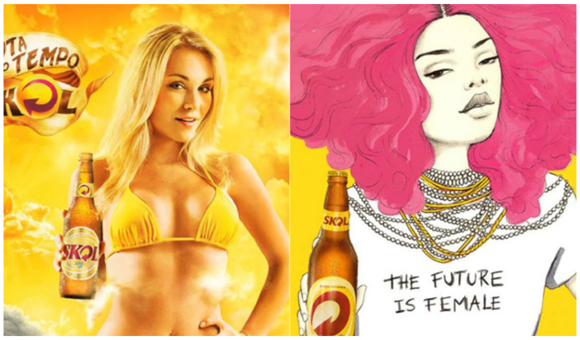


Figure 1. Perry, 2019.

In representation, brands sometimes have the chance to do this in particularly exiting ways. *Skol*, for example, a Brazilian beer brand have hired female artists to remake their old, sexist adverts in more empowering ways (Perry, 2019). Their campaign acknowledges their past culture and actively recodes it to better represent the sort of company they now wish to be.

2. Through taking an intersectional perspective. We need to approach change from a place of complexity. Stereotypes are complex and multi-faceted. Taking an intersectional perspective moves us closer to understanding the lived experience of stereotypes.
3. Through a multi-pronged approach. Stereotypes are often implicit and unspoken. It is challenging to implement a single set of guidelines to successfully improve representation. As such, Unilever's longitudinal *Unstereotype Initiative* is well-suited to delivering genuine change. Our multi-pronged approach leveraged a range of powerful methodologies to create targeted and sustained impact.

Tension Two: How do Global Brands Create a Coherent Push for Better Representation in a Diverse Range of Markets, with Diverse Needs, and Diverse Groups of Stakeholders?

'Consumers' cannot always tell us how to create a better future, but a purely systemic lens can be too 'top down'. We need to take an 'inside out' approach: change must come from within. In the context of *Unstereotype*, this axiom guided our approach in two ways.

1. Firstly, we included local market experts, activists, and thought leaders – in addition to building in the voice of the consumer throughout. This shaped our work around the needs of the communities it sought to represent. We wanted to use these people, not just as sources of information, but as collaborators to help frame our thinking and iterate our work using the cutting-edge of local market conversations around inclusivity and representation.
2. Secondly, we matched our external work with an internal change program within Unilever, to shift hearts and minds. Through our commitment to purposeful work, Quantum understand that sustained change needs networks of devoted stakeholders. As such, raising awareness, engagement, and excitement within Unilever was an essential part of creating momentum.

Tension Three: How do Global 'Everyman' Brands Credibly Speak to Representation in Polarized Societies?

> "It's absolutely a knowledge problem in Turkey. They don't see [sexism] as a problem. They don't even see it. The education part is very important." (Turkish Gender Expert)

We used principles from behavioral science to identify different roles a brand can play in challenging stereotypes. Many approaches to inclusion recognize the need to educate people, but do not go beyond this We used the *Behaviour Change Wheel* to identify a series of different paths to change, including education, but also empathy or direct action (Michie, van Stralen, West, 2011). We used this to guide our analysis and frame our market-specific recommendations. In Turkey, for example, education was highlighted as a barrier to change (see: left). Acknowledging different approaches, from 'increasing knowledge' to 'using shock tactics', gave every brand a lever to pull.

Moreover, it is impossible to credibly improve representation without having built a diverse, deep, and representative sample of the audience in question. As such, diversity was an integral element of this program of work. Throughout our qualitative recruitment, we worked with demographic data to ensure our consumer sample was truly representative and reflected the intersectional nature of stereotypes (e.g., black women experience racism and sexism in a unique way). Across the markets, we spoke to black men and women, but also identified groups like Latinx in the USA or colored (multi-ethnic) individuals in South Africa. We also used moderators that were the same ethnicity as the interviewees to reduce bias. Collaboration was also important. We worked with a network of stakeholders within Unilever to ensure our approach was tailored to a range of business contexts. This collaborative approach was, perhaps, most visible throughout our expert recruitment, with Unilever connecting us with their own advertising agencies in *Unstereotype Experts* to hear about the challenges they face when trying to create more representative work. This built a shared understanding of the complexity within cultures.

UNSTEREOTYPE: CREATING CULTURE-LED CHANGE

This submission will cover four phases of our *Unstereotype* program, which use a range of methodologies to improve the representation of marginalized people in Unilever's advertising and create more inclusive products/pack design.

SUMMARY OF APPROACH

Across *Unstereotype*, Quantum and Unilever leveraged mixed methods to unlock different aspects of unstereotyping. We have conducted four projects, to date, to address different elements of stereotyping. In 2019, we wanted to understand the lived experience of stereotypes, how they were manifesting around the world and how to dismantle them. *Unstereotype Mapping* used semiotics to provide nuanced, country-specific, intersectional guidance on dismantling gender and racial stereotypes (e.g., in the UK, the need for society to make space for the voices of marginalized groups rather than speak on their behalf). In 2020, we wanted to influence internal conversations around stereotypes and representation. *Unstereotype Internal* leveraged organizational change. In 2021, we wanted to create specific 'levers' advertisers could target to improve representation. *Unstereotype Experts* used expert interviews to identify pivot points or areas of tension where advertisers could lead progressive change (e.g., addressing the 'mental load' of managing housework for women in France). Most recently, in 2022, we wanted to create a more inclusive R&D pipeline and advertising strategy for Sunlight. *Unstereotype Sunlight* used Inclusive Design principles to support Sunlight in shaping their pipeline to fit the needs of the silver generation and disabled women.

Phase	Business Objective	Research Question	Methodology	Markets	Key Outcome
Unstereotype Mapping (2019)	To understand racism and sexism	What is the human experience of sexism and racism? How are they perpetuated in culture?	Consumer interviews, experts, semiotics	UK, US, Brazil, South Africa	A semiotic code map; key principles and 'cheat sheets' for unstereotyping; a bespoke Unstereotype framework to support inclusive advertising
Unstereotype Internal (2020)	To change hearts and minds within Unilever	How do you change internal attitudes around D&I?	Workshops, Org. Change	Global	The establishment of a Champions Network
Unstereotype Experts (2021)	To make Unilever advertising more inclusive	What should brands do to improve portrayals of sexuality, gender, race & disability in ads?	Expert interviews, desk research	France, Brazil, Vietnam, Turkey	A set of country-specific 'Change Levers' to guide advertisers
Unstereotype Sunlight (2022)	To adapt Sunlight products to better suit the elderly & disabled	What do women with disabilities and 60+ women need?	Consumer interviews, springboards	Vietnam, Indonesia	Springboards to demonstrate opportunities to develop more inclusive pack/product design and advertising

APPROACH

Across the four projects, we used a range of methodologies to build nuanced perspectives around three key areas:

Understanding Lived Experiences

To understand stereotypes, we needed to take a human lens. We used *Qualitative Interviews* to bring the lived experience to *Unstereotype Mapping* and *Unstereotype Sunlight.*

Qualitative Interviews

Speaking directly to consumers allowed us to understand the reality of discrimination, prejudice, and stereotypes. We wanted to zoom in on how stereotypes made people feel: for example, the pressure experienced by some black individuals in America to achieve perfectionism and prove stereotypes wrong. Speaking to consumers directly – and inviting the Unilever team to attend interviews or watch recordings to hear people express their experiences first-hand – brought human understanding and cultural sensitivity to our work.

We worked to build a representative sample that went beyond quotas to reflect the human reality of marginalized groups. To represent, for example, lived reality of marginalized groups, we identified individuals who experience intersectional marginalization around both age and disability in Vietnam and Indonesia.

Moreover, beyond simply seeking to understand their perspective, we also engaged our participants in the product development process through showing them early-stage product concepts in *Unstereotype Sunlight*. This allowed us to identify strengths and weaknesses, to adapt, iterate and shape our communications going forward

Decoding and Recoding Stereotypes

Beyond the human cost of stereotypes, we needed to understand how stereotypes were enacted; the specific way in which stereotyped representations were communicated in each market. We did this through talking to experts and through semiotic analysis.

Activists and Experts

When society changes and adapts, the most radical shifts are often imagined at the grassroots level. In terms of stereotypes, it is often those from within marginalized groups who can understand and visualize the social changes that need to occur to build fairer, more resilient, and more productive societies. In *Unstereotype Mapping* and *Unstereotype Experts,* we identified pioneering experts and activists who were actively working towards building the future we also sought to understand. Speaking to activists who are working towards representation and breaking stereotypes positioned us at the forefront of the movement. Their pre-existing experience gave us access to the cutting-edge of the conversations occurring around representation. Moreover, these experts were able to speak to hard-to-reach communities from within, rather than without. They helped us mitigate understanding gap and bias that can influence research with marginalized audiences, even when using a diverse interview panel. Their activism and insight allowed them to bridge different perspectives and highlight nuances that might otherwise have been missed. For example, in Brazil, we spoke to a media expert (see: left) who challenged our framing of 'good representation' by stating that advertisers should stop aiming for 'aspirational' representations of race.

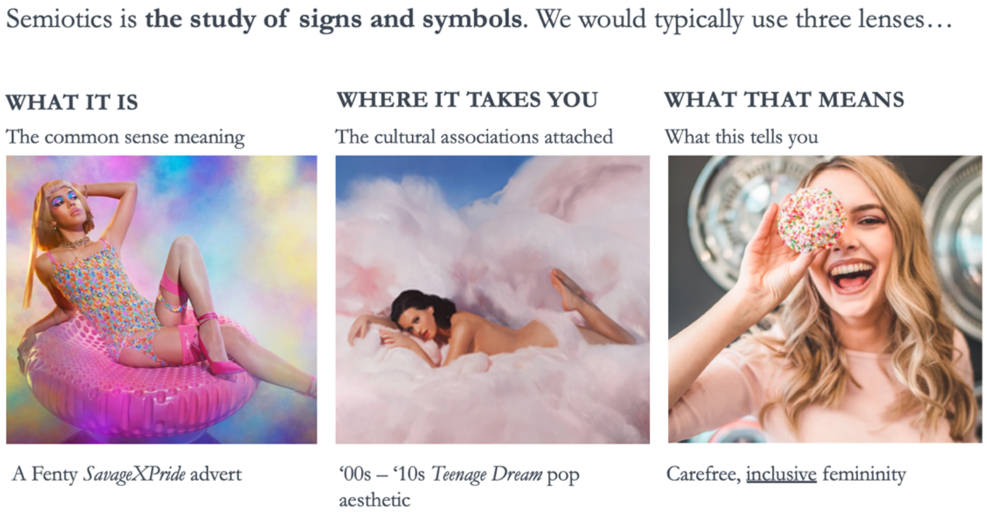
> "I hate this word. What is aspirational? We shouldn't look to aspirational. We should look to identification. Every time aspirational comes to the table, white people come to the table." (Felipe Simi)

Moreover, we used our experts to guide our semiotic analysis. Our network of experts pointed us towards the most culturally resonant examples of advertising, film and other media, to ensure we were identifying what was genuinely relevant, meaningful and progressive at a grassroots, community level. Through using experts as the backbone of our research, we were able to work from within – rather than from without – and identify spaces we might otherwise have missed. In Brazil, for example, we were directed to think about the experience of black masculinity, which one of our experts cited as an underexplored area.

Semiotics and Cultural Analysis

Given that many stereotypes are communicated beneath the surface, it was important to develop a deep understanding of how stereotypes were being communicated in advertising.

In *Unstereotype Mapping,* we used semiotics to analyze the explicit and implicit ways stereotypes were manifesting, visually and verbally, by exploring a range of media material: advertising, television, film, and broader popular culture. Semiotics gives a clear vision of the world so we can understand how organisations are communicating and what consumers understand deeply but often can't communicate (see below).

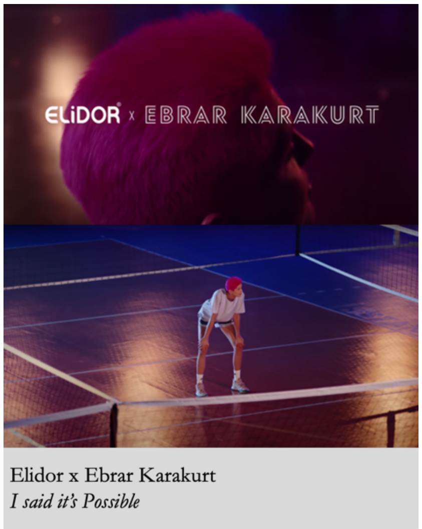


Semiotics is **the study of signs and symbols**. We would typically use three lenses…

WHAT IT IS	**WHERE IT TAKES YOU**	**WHAT THAT MEANS**
The common sense meaning	The cultural associations attached	What this tells you
A Fenty *SavageXPride* advert	'00s – '10s *Teenage Dream* pop aesthetic	Carefree, inclusive femininity

Figure 2.

In *Unstereotype Mapping,* our semioticians used deep and lateral analysis to uncover a wide range of specific, actionable codes and themes, in addition to building country-specific semiotic maps to demonstrate the different narratives being told around race and gender. This clearly demonstrated where the conversation around inclusivity and representation sat in every market and how Unilever should communicate to drive the movement forward. The best brands understand they do not operate in a vacuum but draw their meaning from culture, and in some cases lead cultural movements.



Elidor x Ebrar Karakurt
I said it's Possible

Figure 3.

In *Unstereotype Experts*, we also analyzed the media landscape of the countries covered. As we were working to identify culturally informed levers brands could pull to dismantle stereotypes, we knew it was important to provide case-studies of where brands had succeeded – and where they had not. This ensured our work was rooted in a deep understanding of the specific media context in each market and allowed us to communicate complex ideas through powerful examples rather than broad and generalized statistics. We can see an example of good practice in Elidor's *I said it's Possible,* featuring Ebrar Karakurt. Ebrar Karakurt is a Turkish volleyball player who has recently faced homophobia for being in a public relationship with a woman. In this advert, the key message is that anything is possible, whether it's volleyball success or a shampoo advert featuring a woman with short hair. It stands out as the only advert to be mentioned by every single expert as a seminal example of good representation. Showcasing positive role models is an important way brands can shift the cultural conversation.

Organizational Change, Research & Development

Innovation Springboards

Resilience is rooted in the interconnections between highly complex and interdependent systems, spanning products, communities, policies, services, organizations, and communications. As such, it was important to take Unstereotype to R&D in order to design better products and, as Aline Santos, Unilever's Chief Brand Officer and Chief Diversity and Inclusion Officer states, help to 'create a generation free from prejudice' through systemic change (Unilever, 2021).

Unstereotype Sunlight takes consumer insight into disability and age and builds that into innovation in product design and communications. We are creating actionable springboards to highlight opportunities for tangible action, through demonstrating core unmet needs or problems to be solved. We will also build in early ideas emerging from consumers (e.g., visual language, possible formats & features, communication concepts) to ensure these opportunities to innovate represent genuine problems to be solved within marginalized communities.

Organizational Change

Transformative change happens when hearts and mindsets shift. We therefore needed to take *Unstereotype* into the workplace. *Unstereotype Internal* focused on two primary routes to achieve organizational change.

1. External Provocation
   We invited experts to internal sessions attended by 100+ employees. We hand-picked experts on race, gender, and ageism in collaboration with the Unilever teams and sought to go beyond public speakers to find artists, creatives, and genuine cultural leaders with provocative and progressive perspectives. Talks included *Race & The White Illusion* by writer Ekow Eshun and *A Manifesto Against Ageism* by award-winning writer Ashton Applewhite.
2. Internal Storytelling
   To unlock internal attitudes, we invited leadership teams to talk about their D&I journeys through a 'stories from within' initiative. This was important as, even in the UK, which has a relatively democratic working culture, behavioural science tells us

cultural norms are influenced by those at the top. We aimed to humanise marginalised groups and normalise active inclusion through the oldest and, arguably, most powerful cultural touchstone: stories. However, we also know that stories are most powerful when they are embedded, retold and reinforced. As such, we created a Champions Network to set goals, build learnings and keep momentum.

OUTCOMES AND IMPACT

As a multi-year program of work, *Unstereotype* has had broad-reaching outcomes across eight different countries, multiple different teams and two different business areas (advertising and product/pack design). The work has helped shift perspectives within Unilever, with insights including:

"[Taking action on] representing people from marginalised groups – showing more realistic vs heroic portrayals"

And

"I'll be more conscious of the way I communicate with others, being more conscious about being uncomfortable and not being afraid to call others out"

Our key outcomes include:

- A detailed, country-specific semiotic code-map to communicate the cultural nuance of stereotyping in four countries (the UK, the US, South Africa and Brazil)
- A bespoke framework to demonstrate different facets of stereotypes (e.g., somebody's social role) to consider within adverts
- Key principles for success and 'cheat sheets' to guide advertisers in their decision-making
- Country-specific 'Change Levers' to highlight the cutting edge of inclusivity in advertising (in four markets (Brazil, Vietnam, Turkey, and France), where we should change an aspect of representation to dismantle stereotypes
- A Champions Network to maintain momentum
- A series of exceptionally well-attended Activation Sessions
- A set of Springboards to guide Sunlight's R&D and communications strategy

Unstereotype has delivered, and will continue to deliver, powerful change for marginalized communities across diverse geographies. Unchallenged, stereotypes are a vehicle that allows inequality to travel into the future, through their ability to shape self-belief and influence what we expect, and therefore allow, others to do and become. This project is being used within Unilever to shape their Brand Charters and establish measurable strategies to improve representation. It is part of the foundational understanding and direction Unilever needed to establish what must change and how changes should be measured. Finally, it is being used by *Sunlight* to shape their R&D pipeline and communications strategy. As such, it will improve the products available to marginalized communities – and their representation in the media landscape of tomorrow.

Brands and public sector organizations aiming to create more inclusive advertising can learn from the scope of this work. Not only did this include an internal change program, but also took learnings from advertisers Unilever works with. This allowed us to develop recommendations grounded in reality. Moreover, combining human insight into how stereotyping makes people feel with clear and tangible examples of how stereotypes manifest (and what good looks like) gave both emotional impact and practical guidance.

KEY TAKEAWAYS

1. We need to create change from a place of complexity
   The Unstereotype programme is a powerful example of best practice in understanding diverse, marginalised and minority communities. Our multi-pronged, longitudinal approach is crucial to sustained change as it reflects the complex, interconnected, and evolving nature of both stereotypes and social change. Through taking an iterative, sustained approach that built on previous learnings and expanded along several paths of change, we were able to hear a wide range of voices and build genuine, considered, and dedicated momentum.

2. We must work from 'within' rather than from 'without'
   Our inside-out approach has been essential to creating real change. We have worked collaboratively with Unilever throughout, with a network of cross-company stakeholders able to create broad and authentic interest. Through incorporating organisational change, we have created deep commitment to this process from a broad group of stakeholders. Furthermore, including experts and working in an iterative, flexible manner has allowed us to co-create a process that builds a genuine, grassroots representation of the media landscape of a given culture.

3. There is never one answer
   Genuine resilience acknowledges tensions between continuity and change; growth and heritage; one perspective and another. Throughout this process, we have encountered optimism and pessimism; realism and hope. An interdisciplinary, cultural and, crucially, human approach allows us to navigate these tensions through deep understanding, humility, and respect. Consolidating different perspectives and using case studies demonstrating where brands had succeeded and failed before, let us bring a rich range of recommendations, which included moderate vs. ambitious tactics. In doing so, we created a realistic roadmap towards social change which offered multiple routes to our shared vision of an inclusive and resilient future.

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NOTES

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Designing and Conducting Inclusive Research:

How a Global Technology Company and an Online Research Platform Partnered to Explore the Technology Experiences of Users Who Are Deaf and Hard of Hearing

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KAREN EISENHAUER, dscout
PEGGY HE, Lenovo

This case study examines how researchers at Lenovo and dscout partnered to conduct a mobile ethnographic study on the technology experiences of individuals who are d/Deaf and hard of hearing, with the goal of making their products and research practices more accessible and inclusive. The study revealed common frustrations and pain points people experience when using their every-day technology. The researchers also learned valuable research design and operations lessons related to recruiting participants who are d/Deaf and hard of hearing, providing accommodations, and establishing an accessible research environment. This case explores the benefits of mobile-forward research design, and the additional considerations and adaptations necessary for collecting both asynchronous and synchronous data from individuals who have hearing loss and who have different communication modes and preferences, including American Sign Language. The authors discuss how more inclusive research informs product design, which can make Lenovo and dscout products more accessible for everyone, regardless of ability.

INTRODUCTION

In this case study, we share the story of a research partnership between two businesses – global technology company Lenovo and the online research platform dscout – that joined forces to study the unique technology experiences and obstacles of individuals with hearing loss. In our efforts to explore the lived experiences of our participants, we were challenged to interrogate and adapt our research design and ethnographic practices to be more ethical and inclusive. Design equity for these organizations has been, and continues to be, an important factor to demonstrate ethical and responsible corporate citizenship in the areas of diversity, equity, and inclusion. This case study is a proof-of-concept that research can contribute meaningfully – and is in fact integral – to these efforts and adds to the business case for more generative ethnographic studies in organizations of all shapes and sizes.

Lenovo: Smarter Technology for All

When invoked in many business settings, the terms diversity, equity, and inclusion (DEI) commonly focus on matters related to human resources, an organization's workforce, and the development of an inclusive organizational culture. This is especially true at Lenovo, a Fortune Global 500 company that has built on its success as the world's leading PC player by expanding into new growth areas of infrastructure, mobile, solutions, and services. In 2005 Lenovo acquired IBM's PC division, which created one of the most diverse and multicultural businesses of that time, and leaders worked diligently to develop one inclusive corporate culture (Qiao and Conyers 2014). Since then, the role of DEI has developed into brand purpose for Lenovo, with its vision of leading and enabling "Smarter Technology for All" to create a better world. To support this vision, leaders established the company's Product Diversity Office (PDO) in 2020, which has been the authority on embedding DEI into the

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processes of product design and development. Through the Diversity by Design review process, products are validated by inclusive design experts to ensure usability for a diverse customer base, and to minimize any inherent bias. This systematic approach creates opportunities for our researchers and designers to think about the critical perspectives of users who might be missed when products are considered. To verify that our products work for everyone, regardless of abilities or physical attributes, Lenovo's goal is to have at least 75% of our products through this review process by 2025 (Lenovo Group Limited 2021).

To support these DEI efforts, in 2021 researchers on Lenovo's User Experience Design team began conducting research initiatives with users with disabilities to better understand their everyday experiences with the technologies they rely on, and the challenges they face with those technologies. The first was a generative study conducted on the technology use of people with visual impairments. This study would have typically been conducted in-person and in the field to best capture how they used their tech for work and learning. However, due to pandemic-era safety concerns and restrictions, this was not possible. We needed a solution that would allow us to safely engage with users and capture data from their natural environments, and the mobile ethnography app dscout provided this. In the post-project debrief, the lead researcher passed along valuable feedback to the dscout development team regarding accessibility pain points blind users experienced using the dscout app. In turn, dscout responded with an eagerness to make adjustments to their platform and followed up with our research team to learn more about our own experiences doing research with members of the disability community.

Dscout: Pursuing Platform Improvements

Dscout is an end-to-end mobile ethnography platform that connects researchers to real people, in their real contexts via unmoderated asynchronous qualitative questionnaires and longitudinal diary studies. Throughout the years, dscout has also run various studies with our own participant pool on how to improve the user experience of its own app to make it accessible and inclusive. A study that was run with gender non-conforming participants informed an overhaul of how the platform collects and stores gender data, and a companion study ran with participants of color prompted the team to shift the wording and storage of race and ethnicity data. Dscout now seeks to expand their understanding of their user base by learning about participants with variant accessibility needs, in hopes of moving toward a platform that is inclusive and usable for all.

An Accessibility Research Partnership

Due to our organizations' mutual commitment to creating better experiences for users, passion for inclusive research, and the desire to learn more from members of the disability community, we decided to collaborate on a new accessibility project. We turned our attention to another often-overlooked segment of people -- individuals who are d/Deaf[1] and hard of hearing (DHH). Neither company had previously conducted studies with users with hearing loss, so there was much to learn. And given the prevalence of disability related to hearing loss, focusing on this community is indeed a worthwhile effort. According to the World Health Organization, 430 million people in the world need rehabilitation for their hearing disability, and 25% of those over the age of 60 are impacted by disabling hearing loss (World Health Organization 2021). We developed a two-phased study design modeled after Lenovo's study with individuals with visual impairments, which started with a mobile diary study and was followed by in-depth interviews.

RESEARCH GOALS

The goals for this research initiative were multi-fold. Both organizations recognize that more inclusive research informs product design, which can make products more accessible for all users, regardless of ability. So a key goal was to gain insights on how to make our products more accessible for individuals who have hearing loss, which in turn could benefit all users. This is commonly referred to as the "curb cut effect," where disability features benefit far more people than for whom they were initially designed (Blackwell 2017). For example, curb cuts in sidewalks were originally designed for wheelchair users but are used by individuals pushing baby strollers or delivery workers using a dolly to move heavy boxes. As researchers, we also acknowledged from the start that we didn't know what we didn't know about conducting research with the DHH community. As such, another key goal was to adapt our research design and practice to be inclusive and equitable, taking into consideration the different contexts and needs of our participants. These goals were driven by a broader goal of learning more about the lived experiences of individuals who are d/Deaf and hard of hearing as they use their technology for work, learning, and day-to-day tasks.

To accomplish these goals, we devised four research questions to guide our study:

1. What kind of tech setups do individuals who are DHH utilize in their everyday lives?
2. What are the challenges inherent in using technology as someone with a hearing loss?
3. What design features assist in using technology for the DHH community, and what design features create barriers to use?
4. What design advice do users from the DHH community have for designers at tech companies?

RESEARCH METHODS

Participants

To be eligible for the study, participants had to be 18 years or older, identify as having a hearing-related disability, and use digital technology regularly for their work, learning and/or personal tasks. In order to recruit users who had varying degrees and forms of hearing loss, applicants were asked to identify their type of hearing loss (e.g., sensorineural, conductive, auditory processing, or mixed), the age they started experiencing hearing loss, and the kinds of assistive-hearing tools they used.

After screening over 5,000 applicants through both dscout's participant panel and via a third-party recruiter, we ended up with 23 participants or "scouts"' who qualified for and completed the study (a total of 36 were invited). These participants were selected to represent a wide spectrum of hearing loss, as well as the varying types of assistive hearing devices they used. Along gender distribution lines, 13 identified as female, 8 identified as male, and two identified as nonbinary; their ages ranged from 21 to 70 years old. The majority were employed either full or part time, with two noting full-time status as college students. A plurality of the sample self-identified as having "moderate" hearing loss (Table 1), and more than half reported experiencing their hearing loss from birth and/or before age 18 (Table 2). No users who completed the study reported the onset of their hearing loss after the age of 44, even though seven participants were between the ages of 45-70. Among those who used assistive-hearing devices, 14 used hearing aids and four had cochlear implants.

Table 1. Degree of hearing loss[2]

Degree of hearing loss	Number of participants
Moderate	11
Severe	7
Profound	5

Table 2. Onset of hearing loss

Age range	Number of participants
At birth	10
After birth - age 17	7
Between ages 18-29	4
Between ages 30-44	2

Design

The study was carried out in two sequential stages. First, we carried out a mobile diary study with our full sample of 23 participants. After analyzing this initial data, we invited a subsection of those users to participate in hour-long in-depth interviews probing more in depth on their initial responses in the diary study. We lay out our methods, and their rationale, in detail below.

Diary Study (sort of)

The first stage of our project consisted of a mobile unmoderated study using the dscout Diary tool. We use the term "diary" as a shorthand for our method, but it might be better described as a media-rich contextual survey. The study at hand consisted of five disparate qualitative research activities (called "Parts"), which participants filled out via their mobile phone at their own pace over the course of 2 weeks. These Parts were, in order:

1. **Background and Consent:** Telling scouts more about the mission and asking various questions about how they prefer their data to be used.
2. **Your Tech Space:** Participants tell us about the space where they use technology frequently.
3. **Your Devices:** Participants show us all the devices they use on a daily basis.
4. **Great Design, Bad Design:** Scouts tell us more about the highs and lows of the technology they use.

5. **Challenges and Final Thoughts:** We ask about challenges scouts face as someone who's D/deaf or hard of hearing and ask them their final thoughts to close out the study.

Dscout's platform allows participants to complete activities more than once, allowing them to submit multiple "entries," detailing as many tools as they had, and more for each design example they wanted to talk about (Figure 1). In Parts 3 ("Your Devices") and 4 ("Great Design, Bad Design"), participants submitted multiple entries going into great detail about individual devices and design elements (Figure 2). We were careful in these Parts not to define too closely what we meant by "tool" or "design." Avoiding close description allowed us to scaffold participant video responses (and ensure detailed information) while organically allowing trends that were naturally important to float to the top.

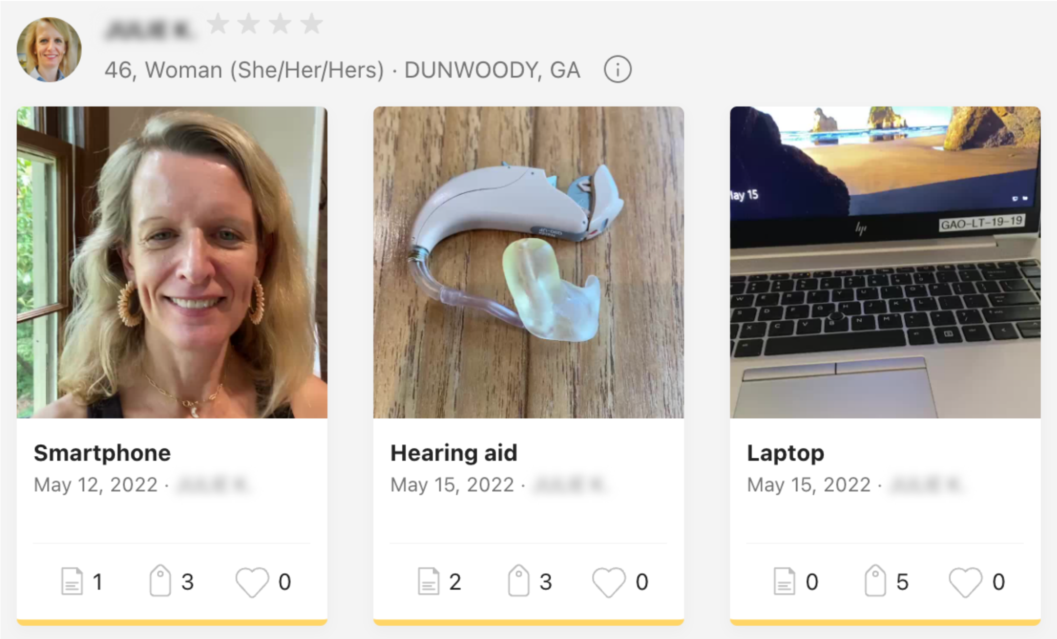
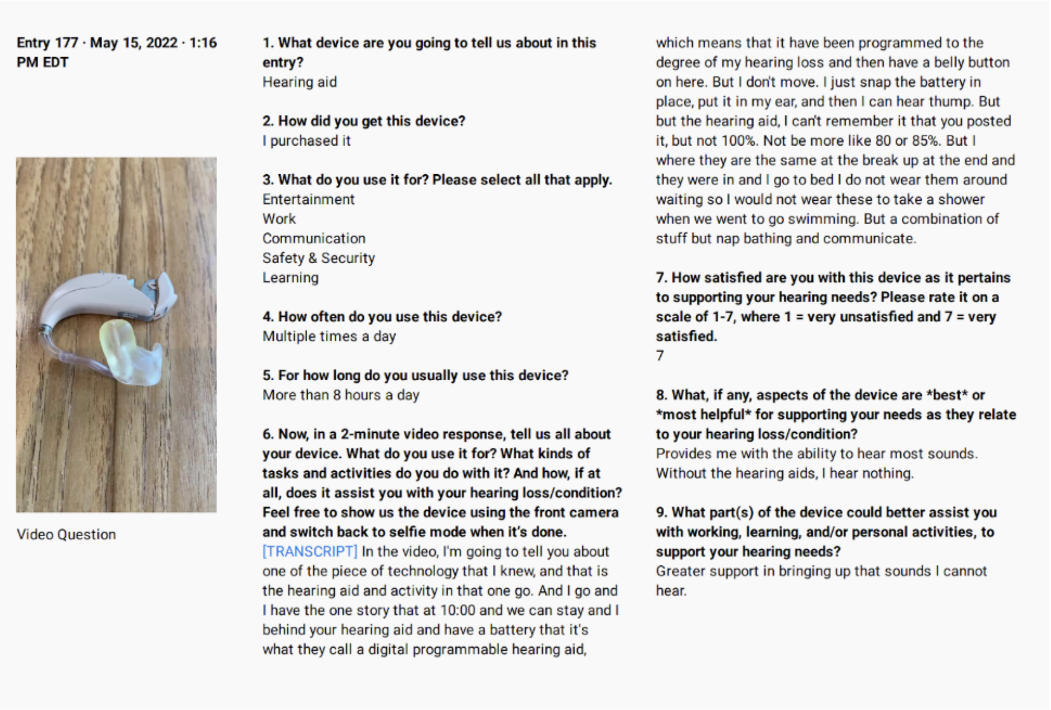

[redacted] ★★★★
46, Woman (She/Her/Hers) · DUNWOODY, GA
Smartphone
May 12, 2022 · [redacted]
1 3 0
Hearing aid
May 15, 2022 · [redacted]
2 3 0
Laptop
May 15, 2022 · [redacted]
0 5 0

Figure 1. Birds-eye view of devices shown by participant in Part 3.



Entry 177 · May 15, 2022 · 1:16 PM EDT

Video Question

1. What device are you going to tell us about in this entry?
Hearing aid

2. How did you get this device?
I purchased it

3. What do you use it for? Please select all that apply.
Entertainment
Work
Communication
Safety & Security
Learning

4. How often do you use this device?
Multiple times a day

5. For how long do you usually use this device?
More than 8 hours a day

6. Now, in a 2-minute video response, tell us all about your device. What do you use it for? What kinds of tasks and activities do you do with it? And how, if at all, does it assist you with your hearing loss/condition? Feel free to show us the device using the front camera and switch back to selfie mode when it's done.
[TRANSCRIPT] In the video, I'm going to tell you about one of the piece of technology that I knew, and that is the hearing aid and activity in that one go. And I go and I have the one story that at 10:00 and we can stay and I behind your hearing aid and have a battery that it's what they call a digital programmable hearing aid, which means that it have been programmed to the degree of my hearing loss and then have a belly button on here. But I don't move. I just snap the battery in place, put it in my ear, and then I can hear thump. But but the hearing aid, I can't remember it that you posted it, but not 100%. Not be more like 80 or 85%. But I where they are the same at the break up at the end and they were in and I go to bed I do not wear them around waiting so I would not wear these to take a shower when we went to go swimming. But a combination of stuff but nap bathing and communicate.

7. How satisfied are you with this device as it pertains to supporting your hearing needs? Please rate it on a scale of 1-7, where 1 = very unsatisfied and 7 = very satisfied.
7

8. What, if any, aspects of the device are *best* or *most helpful* for supporting your needs as they relate to your hearing loss/condition?
Provides me with the ability to hear most sounds. Without the hearing aids, I hear nothing.

9. What part(s) of the device could better assist you with working, learning, and/or personal activities, to support your hearing needs?
Greater support in bringing up that sounds I cannot hear.

Figure 2. Example of in-depth questionnaire about devices listed in Part 3.

The Diary study's aim was to understand the context of our participants' lives on a higher level. We analyzed the data with an eye for context of their lived-in spaces and most-used devices. We also used close-ended data collected within the questionnaires to understand relative prevalence of the technologies being used, as well as the frequency and severity of tech-based design barriers and challenges. Once we completed the diary analysis and distilled high-level themes, we moved on to the interview portion of our study.

In-depth Interviews

From the 23 participants who completed the unmoderated diary mission, we selected nine individuals to participate in live, one-on-one, interviews. Interview participants were selected to capture a range of diverse experiences based on differing degrees of hearing loss, as well as a distribution across ages, genders, and ethnicities. After studying their responses from the diary mission, we developed a moderator guide that aimed to dive deeper into information scouts shared in their diary mission. Topic areas explored participants' work/home tech set up, the assistive technologies and tools they valued most, technology barriers they experienced that related to their hearing loss, and what they envisioned as their perfect device. The interview data were used for a more in-depth follow-up on the initial themes highlighted in the diary study: these data were coded extensively for key themes. Videos and verbatims from both elements of the study, as well as graphs and charts from the diary study, were ultimately used when building our insights.

FINDINGS

While the participants in our study experience their hearing loss in a variety of ways, our results suggest a pattern of common communication challenges that DHH users have when using their technology. Several pain points rose to the top, and we found that the DHH community expressed the greatest need for the following.

Improvements in Video Calling and Live Digital Meetings

Understanding and communicating with others in live, online meetings was the most common source of discomfort, frustration, and exclusion that users discussed. DHH users need improved technical accessibility in these environments, as well as greater understanding of their circumstances and needs from hearing individuals who share their online space. Users shared a variety of examples of challenges in these environments. These included difficulty with lip reading when video quality is poor, the connection lags, or individuals turn their cameras off, and managing multiple screens/streams with chat, captions, and video to keep up with conversations. Some deaf individuals who use Video Relay Services (VRS) and Communication Access in Real Time (CART) services noted they were not able to run these on one device and had to set up a second device (such as a laptop or tablet) to see their interpreters and/or transcribers. For those who sign, some platforms will not recognize them in "speaker" mode because it reacts only to audio (versus motion). DHH users can also struggle with following along with calls with multiple speakers or when people do not speak one at a time.

> "None of [my colleagues] know anything about communication with DHH individuals. Some of them always speak at a million miles a minute and it's so annoying since AI can't keep up and I can't understand them. Most people at my company hate turning the camera on as well, even if they are speaking, so I can't speech read to make sure the closed captioning and the audio is correct." (She/her, 37, severe hearing loss)

> "When I am on a phone call or when I am on a meeting that isn't a video meeting the biggest challenge is the fact that people without hearing loss don't think to speak clearly and they often speak over each other. I don't know how to explain to people that video meetings would work best for me without sounding rude." (She/her, 42, moderate hearing loss)

> "Even though I can comprehend 90% of what is said on a call because I wear headphones that have good speakers, I still miss what is said at times, especially if the person isn't looking directly at the camera or turned away or looking down or away to read notes. There is a challenge then." (He/him, 51, severe hearing loss)

> "If I'm at a public place, background noise may be an issue. If I'm working outside without a monitor, sometimes it's inconvenient to keep a window open with captions while paying attention to something else, for example during a videoconference." (They/them, 25, moderate hearing loss)

Captions and an Improved Caption Experience

The users in our study rely heavily on captions when using their technology, and these are especially crucial for their understanding and participation in online conference calls for work, learning, and entertainment. As one user with profound hearing loss told us, captioning is "so, so important to my life as a hard of hearing individual. This accessibility feature enriches my life, my quality of life, and I use it for learning and entertainment." But captioning tools and features are far from perfect. Our participants shared a variety of challenges with captions, such as inaccurate captions (generated from automatic speech recognition apps), captions being out of sync with video, obtrusive or distracting placement of captions on the screen, and worst of all – no captions provided at all.

> "Automatic speech recognition (ASR) is provided on some social media sites and websites, but is not accurate and can be very off-putting with inaccuracies." (She/her, 41, severe hearing loss)
>
> "The only feature I use sometimes is the closed captioning for the hearing impaired. Sometimes it helps, other times it is confusing as it lags behind what is actually being said or talked about. So, it is hit-or-miss." (He/him, 51, severe hearing loss)
>
> "[captions] are specifically stuck on the bottom. So, I'm having to bounce up, back and forth between the interpreter and the captions." (He/him, 61, profound hearing loss)
>
> "The [online platform] meetings do not offer closed captioning…And so a lot of times I quite honestly, even with my hearing aids, I miss what's been said. But if I'm listening to a video or music or something like that, it gives me the option to do closed captioning because…part of it is panic that I'm going to miss out on what's been said. But another part is the reality that I just don't capture the speech like everyone else does. And so closed captioning is absolutely important for me to be able to participate and follow along."[3] (She/her, 52, moderate hearing loss)

DHH users want native and accurate captions to use when speech and audio are the primary modes of communication online. And they want to be able to activate captions on their own and adjust their placement to suit their needs and use cases. Offering captions and improving captioning features for better accuracy and customizable placement would benefit not only DHH users, but anyone who uses captions (e.g., a student who is a non-native language speaker and learning a new language, an employee in a loud environment, or a parent watching a video with a sleeping child nearby).

Hearing-Assistive Device Compatibility

Participants also told us they need improved device compatibility between their hearing-assistive devices – their hearing aids and cochlear implants – and their computers. Many laptops lack the ability to connect directly to these devices via Bluetooth, which is a feature that many smartphones offer. Bluetooth was the device feature that was most valued by the users in our study, and they discussed how both the presence and absence of Bluetooth impacted their tech experiences.

> "My cochlear implant connects directly to the phone when I take calls. And that's been really great. The one big complaint I have about the N-7 [model implant] is that it does not connect to my computer or to my [tablet]. And so that in itself has become frustrating because I still have to use my mini mic." (She/her, 27, profound hearing loss)

> "If my hearing aids could connect to my [digital] photo frame and my…tablet or my laptop – sounds are always clearer if they go directly through my hearing aids instead of them picking up the external sounds." (She/her, 66, moderate hearing loss)
>
> "Also, maxing out the volume on my computer is sometimes not enough if I'm playing a video or sound byte. I'll have the volume maxed out, and it's still not loud enough for me. So if the sound went straight into my hearing aids, this would solve things!" (She/her, 41, moderate hearing loss)
>
> "I can't use headphones…So that's why I don't work in a public space… I would love it if I could find a way to hook up my laptop to my hearing aids. That would make my life so much easier. And I would be able to possibly try working in public spaces." (She/her, 27, moderate hearing loss)

For video of the participants, see https://drive.google.com/file/d/1qlaT37YuYoFfSFjrP0EZpkYOgbR-lYnB/view?usp=sharing

LEARNINGS: ACCESSIBLE RESEARCH DESIGN

While we identified goals for this study and articulated research questions specific to the tech experiences of DHH users, we also recognized an important internal, reflective goal for ourselves as researchers: to explore ways to make our research design and operations more inclusive and challenge any unconscious biases we may have as hearing researchers who had only, up until this point, conducted research with hearing participants. Through this process, we amassed valuable learnings about designing more accessible research, particularly in the areas of recruitment, providing accommodations and options for participants, and working with platform limitations. In this section, we explore three key areas of consideration for working with the DHH community.

Recruitment Considerations

Finding the Right People: Recruiting Across the Disability Spectrum

The first key consideration we gave thought to was, how do we find the right people for the study? While the question may seem straightforward, it is important to resist the urge to over-simplify for the sake of speed or efficiency. As disability experts and advocates remind us, "If you've met one person with a disability, you've met one person with a disability" (Lu and Douglis 2022). Disability is not one size fits all, and individuals who have similar disabilities or conditions can have vastly different lived experiences, needs, and preferences. Based on Lenovo's experience working with individuals who have visual impairments, we understood the need to develop screening criteria that would help us identify the wide spectrum of hearing loss that individuals have, as well as the unique needs of DHH users.

Even before developing the screening criteria for the study, we conducted desk research to make sure our study design was as inclusive as possible from the beginning. Drawing on resources such as published articles, informational and training materials, and the work of disability experts, we educated ourselves on topics related to the different types and degrees of hearing loss, the assistive technologies and services DHH people use, the preferences and various forms of DHH communication, and Deaf culture. This homework was critical in preparing us to better understand the unique needs and preferences that DHH users have.

As a result, we were able to avoid a "one size fits all" mindset and accommodate each participant's individual needs.

Niche Recruits

Another key consideration of recruitment was how to address the logistical challenge of recruiting for a niche population. Although ~15% of the US population reports having some kind of hearing impairment, only 2% have debilitating hearing loss (NIH 2021.) We also anticipated people with severe hearing loss may be unlikely to be a part of existing research pools if other platforms or researchers don't give proper accommodations for their participation. This turned out to be true: when we began recruiting using dscout's internal panel, we received 5,000 applications, only 36 of which met our criteria. Of those 36, 32 identified as having "mild or moderate" hearing loss while only four identified as D/deaf.

We addressed this anticipated challenge through several strategies. First, we set an incentive higher than dscout's standard recommendation for a study of this scale. We were also prepared with several different recruitment strategies. In addition to using dscout's internal pool, we enlisted a third-party recruiter for a targeted recruitment aimed specifically at those with severe or profound hearing loss. We also supplemented with an internal network of recruits at dscout and Lenovo.

These strategies combined were ultimately successful. However, they did take substantially longer than a less challenging recruit might. Our recruitment phase lasted three weeks from the launch of our initial screener to our final addition to our project.

Signaling an Accessible Space: Preparing for Future Accommodations

The final recruitment question we asked ourselves: how do we leverage the recruiting process to build and signal an accessible research environment? To this end, we also included questions in the screening questionnaire to better understand a user's preferred way(s) of communication so they could provide inclusive response options and accommodations for participants when designing the diary study. For example, applicants were asked, "How do you prefer to convey your ideas when communicating with people in a virtual environment?", and could then select all that applied from a pick list that included sign languages, sign language interpreter, text/typing, speaking, voice carryover, and hearing carryover. Similarly, applicants were also asked how they understood other people when communicating in a virtual environment.

The addition of these communication needs and preference questions proved critical in both preparing questions for the unmoderated diary study, as well as coordinating accessibility services for our research operations in the form of American Sign Language (ASL) interpreters and Communication Assisted Realtime Translation (CART) live captioning, that would be needed in the live interviews and data analysis. Asking these questions up front also signaled to potential participants that they would have proper accommodations, helping to establish a sense of trust early on.

Considerations of Medium

Why Remote-Forward Design?

For those coming from a background of in-person ethnography, using a remote method – especially an unmoderated survey-based method like a mobile diary study – could raise concerns. Diary studies are a somewhat piecemeal approach to ethnography and could feel like ‘resilience’ at best or a desperate compromise at worst. But we found that using this format provided several methodological *advantages* over a traditional in-person style.

Firstly, asynchronous methods allow the ability to reach niche participants at scale. An already niche recruit would have been that much harder to fill had we been bound by locality or visiting schedules, which are side-stepped in a remote setup. Asynchronous methods also allow exponentially more participants with minimal additional effort. Remote forward methods also bring us into a participant’s natural settings more easily, allowing us access (albeit more limited in scope) to intimate spaces that would be difficult or impossible to see in person.

For example, we wanted to understand the physical setup of each participant’s home workspaces, and so designed an unmoderated activity where they took us on a 2-minute tour of their homes and explained what technologies in their space were important for serving their accessibility needs. While the data is perhaps more limited for each individual participant, we were able to recruit and collect rich video data from 23 participants in a hard-to-reach population within the course of a single week, a next-to-impossible task if using traditional home visits. The videos also feature homes in their ‘natural’ state, where an in-person visit may have prompted participants to clean up or otherwise alter their spaces in preparation for visitors.

To see a participant give a tour of his working space, see https://drive.google.com/file/d/18J47z3u68JGWuyZGrTP-QJAaUQsAD_W0/view?usp=sharing

Additionally, the largely written and unmoderated format of communication between researcher and participant made it so that much of the study was easily completed regardless of hearing accessibility needs. We also learned through our study that mobile phones are more readily paired with many accessibility devices. Dscout offers omnichannel support, meaning we could have run this on a desktop computer; we were lucky to stumble into the more accessible option.

Considerations and Concerns with Remote Design

Although remote technology offers certain benefits, digital tools have their own challenges that need accommodation. First, we needed to build in extra time for the signed videos collected in the diary study to be translated and returned to us before we could analyze them. Second, the automatic speech recognition (ASR) engines were less accurate for some of our participants who had deaf accents and needed to be hand-corrected before they were useful for analysis (Table 3).

Table 3. ASR v. hand-corrected transcription

ASR Transcription	Hand-corrected Transcription
“Now, the Brahman would not have done what I'm doing. You do know I have to be wounded. Careful not to put the phone too hard. Ah, the way. Oh. And I am warning my swallow only. Whoa! And my hearing no more. I have to tell you, call your mole. My hearing a. Was he a my nephew? Go, go. Da da da. Where do you put the sea? Because Petar don't want to be broke. Never have a normal here.We just like everyone know that we're here. Yeah, but you see the good. The car that was. Yo, yo, yo. Ah! What is she doing? A better hope mug. I came for Quinn, though, demolishing the wood. Don't the turbo the total coil commodity. I will not be booking toy gaming new it communicate with my friend the family.”	"Now the problem with that is when I'm using it on the computer, I have to be really careful not to pull at the cord of the headphones too hard otherwise the headphone breaks, and I'm pretty much royally screwed. And because of my hearing loss, I have to use the telecoil mode on my hearing aid, which you can see here on my left ear. So because of that – that is really frustrating because I want to be able to live and have normal hearing just like everyone else that doesn't wear hearing aids. But you see, this is the card I was dealt at birth…Without the headphones and the telecoil neckloop technology, I would not be able to enjoy gaming, music, communicating with my friends and family.”

Additionally, not every platform is prepared to accommodate complex accessibility needs. For example, at the time of the study, dscout Live (dscout’s moderated research tool) had some barriers to inclusive research that needed to be worked around. First was the lack of captions. As discussed in our findings section, captioning via ASR – while far from perfect – is considered a crucial accessibility need by many DHH people. Second, the Live product did not have a third video stream option. Three of our scouts used ASL to communicate and required a live interpreter. Without a third video stream, this essential accessibility service could not be provided. And in a remote setting, there was no workaround in dscout for these issues.

To address these issues, we worked closely with an inclusive communications service provider to adapt our approach. We still used dscout Live for our recruitment, scheduling, and payment processes, but for the interviews themselves we used Zoom. Zoom is not a purpose-built research tool, and as such required some extra steps on the backend to prepare for analysis. However, it had the accessibility features that we required for this project. ASL interpreters and a CART transcriber were hired through the service for users who needed these accommodations. Feedback about dscout’s barriers in the Live tool was delivered to the product team, which are now being addressed (see “Moving Forward” section).

Data Collection

Collecting Asynchronous Data

One of our key considerations when designing our mobile ethnographic study was that of collecting asynchronous qualitative data. Dscout as a platform was built around collecting video data from participants. We knew from experience that videos are highly valuable tools for building empathy among stakeholders, as well as collecting more in-depth answers than open-ended that text responses normally provide. However, since we had recruited some participants who don't vocalize, recording video could come as a challenge, especially since mobile phones need to be held or propped up with one hand while taking selfie-style videos. The question became, how do we accommodate their language (ASL) while still collecting as rich of data as possible?

We experimented with two different answers to this question. In our screening process we made video *optional* in the screening process, allowing participants to opt out and write their answers instead. As a result, we saw a significant difference in both quantity and quality of information gathered in the written responses versus the spoken / signed responses. In the diary study itself, we opted to make the videos non-optional. We accommodated this choice by enlisting the services of an ASL interpretive service and including language early and often that signing was encouraged if it was our participant's main or preferred method of communication. We built in extra time after the Diary study closed to have these videos transcribed, captioned, and voiced over. The captions were re-uploaded into dscout's video viewer for analytical reference.

The videos we have are powerful tools to demonstrate our findings and are considered especially valuable for emphasizing a user's individuality. These were developed into curated reels and incorporated into internal deliverables for Lenovo stakeholders. However, some participants did encounter some unexpected difficulties with dscout's video recording software. Outside of the aforementioned difficulties of taking video while signing, there was an added issue wherein dscout measured "quality" of video response by how much was spoken. For signing scouts, this meant that some videos without sound were read by the platform as an error and prompted a re-upload where none was actually necessary. This feature was an attempt to make the platform more convenient for researchers by reducing video upload error rates, but ultimately didn't take into account the non-audio use case.

Collecting Synchronous Data: Working with Interpreters

The concerns of collecting synchronous qualitative data feel more analogous to in-person accessibility concerns. Mainly, our question was, how to respectfully and effectively communicate in real-time with participants who don't vocalize? To prepare, we took steps to educate ourselves about best practices for working with ASL interpreters and the pain points that so many DHH people experience with video conferencing (Kushalnagar and Volger 2020). As a result, we made important adjustments to how we planned and conducted these interviews, which included:

- Turning on the closed captions in Zoom before the video interview began. Zoom's default is to not show captions, so before each interview, we enabled closed captions so that all interview participants did not have to specifically request it (a thoughtful inclusive practice, even in daily life for online meetings).
- Labeling the interpreter or transcriber in Zoom (also called "renaming") before the session begins, to indicate their identity for the interview participant.
- Providing the ASL interpreter and CART transcriptionist with our moderator guide/interview questions to preview several days before the sessions.
- Allowing a few minutes before starting the interview for the signing person to communicate with the ASL interpreter about their signing style, rhythm, and the like, to allow for smoother interpretation.
- Looking at and speaking directly to the person who is signing, and not at the interpreter.

- Allowing for pauses and a few seconds delay when working with an interpreter. It's tempting to interrupt the interpreter if you do not focus on the DHH participant and fail to notice that they are signing while you speak.

Moving Forward

Both dscout and Lenovo learned a lot in this research process. We as researchers intend to take these learnings forward in our organizations. The results were shared out internally at Lenovo, and designers are working to innovate and incorporate these findings into future planning. However, the more immediate impact has been based on our learnings for inclusive research design, which are manifesting in several ways at both organizations.

Improved Platform Accessibility

After the project's conclusion, we collaborated with dscout's Product Researchers to collect feedback from our participants about using the app. Between the feedback we collected and the learnings from this mission, we were able to build a business case for several key product improvements:

- Videos without sound were occasionally being erroneously flagged as 'errors', which others signed responses; this has been flagged as a bug and is currently being corrected.
- Dscout Live was not an option for this project due to the lack of live transcription software. Dscout has taken this to heart and will start rolling out live automatic captioning into dscout Live starting October 19, 2022.
- Plans are also being made for a multi-moderator mode of dscout Live. This will allow more than one "researcher" to be present at a time; while this has many use cases in the research world, it will notably allow for researchers to be on-call with interpreters or translators.

Combined, these features will eliminate the biggest barriers for use among DHH users in the current iteration of our platform

Inclusive Design Best Practices

Both Lenovo and dscout are working on crystallizing their learnings and sharing them with the wider research practices within their organizations. These concrete best practices currently include:

- Allocating budget for transcription and translation services, to allow for signing respondents to participate fully in the project;
- Offering multiple means of responding to key questions, including speech, signing, or writing, depending on the needs of participants and researchers;
- Building in time to do advance desk research on key demographics and demonstrating understandings to participants;
- Asking participants, no matter what study's focus, whether they need accommodations to fully participate in the study at hand.

We fully believe, and are intent on communicating to our organizations, that these best practices are crucial for running research on accessibility. But in addition, the "curb cut effect" also applies to research; these learnings will not only improve accessibility research but will make *all* research design more flexible and respectful for participants.

CONCLUSION: NOTHING ABOUT US WITHOUT US

"Nothing about us without us" is a phrase that has come to signify the disability rights movement, and as disability rights activist James Charlton has written, "expresses the conviction of people with disabilities that they know what is best for them" (Charlton 2000). Lenovo and dscout recognize that asking customers with disabilities about their experiences, and doing so thoughtfully, is essential to developing more accessible products. This, in turn, can impact far more people than we might imagine, resulting in better experiences for everyone. Including individuals with disabilities at the user research table and designing research that allows them to participate in ways that are best for them, has given us the opportunity to better understand the role technology plays in their day-to-day lives. The disability community has historically been left out of these conversations, and some users in our study acknowledged this and expressed appreciation for being included:

> "I think it's worthwhile what you all are doing because I've not had anybody ever ask me about how it is to live as a person that's hard of hearing…And it's a significant handicap to have a hearing loss because to look at you, you wouldn't know. But to just have somebody take an interest in that segment of the population, I think is worthwhile. So, thank you." (She/her, 40, moderate hearing loss)

Hearing the unique perspectives of users with disabilities also puts in stark relief the power we have as tech companies to promote equity and inclusion on a larger cultural level through product design and brand purpose. When one participant with severe hearing loss discussed the kinds of assistive technologies he relies on, he added, "I also rely on human understanding, empathy, [and] compassion so that technology designers and developers create inclusive products that make me feel like an equal member of society."

The participants in our study discussed the numerous tech obstacles they experience each day, as well as how they adjust and practice resilience when experiencing those challenges. The burden of finding workarounds and adapting falls on many disabled individuals, who must make extra efforts to navigate a world that is not, as several of our participants noted, made for them. However, if we are researching and designing to include their perspectives from the ground up, then ideally, individuals with disabilities would not have to spend time and energy trying to find ways to make their products work for them. The onus should shift to businesses and organizations to adapt and be resilient in their product design. Taking these steps has the potential to add great value to the lives of our customers. Embracing this responsibility of corporate citizenship can contribute to improving accessibility and inclusion for all users.

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NOTES

Thank you to our employers for their support of and commitment to accessibility research and inclusive product design. We are especially grateful to our research participants who took the time to share their lived experiences with us. Thank you for your grace and patience as we continue our accessibility journey. We are better researchers for having learned from you.

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1. We use a capital "D" in "Deaf" to denote individuals who have self-identified as culturally Deaf and self-identify as members of the Deaf community. The use of a lowercase "d" in "deaf" refers to individuals who do not self-identify as culturally Deaf or part of the Deaf community. We also use the lowercase "d" in "deaf" when characterizing one's audiological status/condition.

2. We asked participants to self-identify into different levels of hearing loss based on the following definitions:

- Mild hearing loss: Mild hearing loss: difficulty understanding normal speech, especially with background noises (e.g., Conversations are easier to hear without background noises, such as TV or radio)
- Moderate hearing loss: difficulty understanding most normal speech even with no background noises (e.g., Conversations and TV volumes may become louder even when there is no background noise, so they're easier to hear)
- Severe hearing loss: difficulty understanding even loud speech and will not perceive most noises (e.g., Sounds such as airplanes and lawnmowers can be more challenging to ear without amplification or an assistive listening device)
- Profound hearing loss: cannot perceive even loud speech and noises (e.g., Louder decibel sounds such as sirens may be perceived as vibrations instead of sound)
- Other (please specify)

3. Captioning is available in the Zoom platform; however, it must first be enabled by the meeting organizer.

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PAPER & PECHAKUCHA SESSION

Critical Perspectives on Embracing Resilience

This session critically evaluates conventional ideas and practices resilience to reveal paradoxes and pitfalls. These presentations will show how resilience can be either a toll or an opportunity to create systems of reciprocal care. Presenters also provide tools and fresh ideas to reframe the concept of resilience in turbulent times.

Curators: Selene Camargo-Correa (*A Piece of Pie*) and Smriti Kaul (*Convo*)

Jobs Not to Be Done

Anti-Work Theory and the Resilience of Mutual Aid

TODD CARMODY, *Gemic*

This paper explores recent developments in anti-work theory to identify key learnings for ethnographers in industry. It focuses in particular on how anti-work perspectives allow us to rethink the managerial notions of resilience that dominate across many of the industries that collaborate with corporate ethnographers. In this tradition, achieving resilience is a matter of "finding yourself" at work – of ensuring that a job is not just a paycheck, but an avenue of self-fulfillment. In order to explore what resilience might look like if we bracket the question of work, this paper turns to COVID-era mutual aid projects. Two key learnings help reframe anti-work theory for the EPIC community: the necessity of 1) rethinking the notion of reciprocity that sustains our commitment to work (you only get out of work what you put in) and 2) making positive claims on behalf of freedom (not freedom from work but freedom to make the conditions of your life).

INTRODUCTION

If recent news reporting and cultural commentary are any indication, there are many lessons to learn from the "great resignation." But most accounts align on a single takeaway – that the voluntary workplace departures that began in early 2021 radically transformed the worker's relation to the labor force. Whether demanding unionization, a living wage, or greater flexibility, this now-familiar story goes, people started voicing their dissatisfaction with the status quo. They set out, en masse and as never before, to get more out of their working lives. Framed as such, these lessons are relatively easy for ethnographers in industry to take on board. Not only has the study of work been foundational to the academic disciplines of anthropology and sociology from which many practitioners hail, but ethnographers in industry are routinely called on to explore the outsized importance of work in people's lives. The COVID-19 pandemic, it would thus seem, has brought sharper relief to something that the EPIC community has long intuited: that people want more out of work than just a paycheck.

But what if this is not the only or even the most important lesson to be gleaned from "the great resignation"? What if the real takeaway is not that people want more out of work – new ways of making work meaningful – but new ways of defining themselves and their lives *outside of work*? What if the point is not to make work better, but to work less or to avoid work altogether? These are the conclusions reached by a growing body of interdisciplinary thought on anti-work politics. What began as a niche field of research and activism on the margins of Marxist, feminist, disability, and critical race studies is now finding surprising traction in popular culture. The visibility of recent trade books like Sarah Jaffe's *Work Won't Love You Back*, the popularity of the anti-work thread on Reddit, and growing enthusiasm for universal basic income proposals are but three data points suggesting a broader trend – that anti-work politics are moving into the mainstream and may even be fueling a backlash against work itself.

Where does this backlash leave ethnographers in industry? What can anti-work theory bring to the EPIC community? This paper explores the history of and recent developments in anti-work thinking to identify key learnings for ethnographers in industry. It will focus in particular on how anti-work perspectives offer a new understanding of conventional ideas about *resilience*. There are many ways, of course, to define resilience, most of which may seem to have little to do with work. But across many of the industries that collaborate with corporate ethnographers, the term *resilience* has a distinctly managerial ring. This is not by

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chance. Since the emergence of the "human resources" paradigm in the mid-1970s, managerial theorists and practitioners have sought to better align workers' desires with organizational objectives. As one early champion wrote, "We seek that degree of integration in which the individual can achieve his goals *best* by directing his efforts toward the success of the organization" (McGregor 1960, 55). Resilience from this vantage is a matter of massaging – if not erasing – work/life distinctions so that individuals can find fulfillment in productivity (Costea et al 2007). As the authors of *Resilience at Work: How to Succeed No Matter What Life Throws At You* put it: "Human beings have the unique ability to utilize activities, like work, for creative expression and fulfillment of life purpose and meaning. Unfulfilling work stifles these human capacities" (Maddi and Khoshaba 2005, 180).

But what does resilience look like if, taking the lessons of anti-work theory on board, we bracket the question of work? This paper looks for potential answers by turning not to the great resignation but to a parallel social development, namely the proliferation of mutual aid projects during the COVID-19 pandemic. As an overview of recent ethnographic research demonstrates, mutual aid projects are fertile ground for thinking about what might come after work. In particular, mutual aid projects highlight two learnings that help us reframe anti-work theory for ethnographers in industry: the necessity of 1) rethinking the notion of reciprocity that sustains our commitment to work (you only get out of work what you put in) and 2) making positive claims on behalf of freedom (not freedom from work but freedom to make the conditions of your life).

In what follows, I survey the theoretical underpinnings of recent anti-work theory, charting a perhaps unlikely course from Aristotle and Luther to Marx and contemporary managerial theorists. The paper next turns to recent ethnographies of pandemic-era mutual aid initiatives to flesh out the questions of reciprocity and freedom at the core of the anti-work project. I conclude by exploring the usefulness of anti-work thinking and organizing to ethnographers in industry by drawing on recent examples from my own project work.

THE WORK SOCIETY AND ITS DISCONENTS

Why should we assume that all work is or should be inherently meaningful? And why do we cling to this idea even in moments of social rupture – like the COVID-19 pandemic – where change feels most possible? Hardly new, the questions at the heart of anti-work theory are rooted in the broader constellation of ideas and institutions that social theorists often call "the work society." As the philosopher André Gorz notes, work societies consider work at once

> a moral duty, a social obligation, and *the* route to personal success. The ideology of work assumes that the more each individual works, the better off everyone will be; those who work little or not at all are acting against the interests of the community as a whole and do not deserve to be members of it; those who work hard achieve success and those who do not only have themselves to blame. (Gorz 1980, 126)

In work societies, the value of work is not only or even primarily economic. Work is the means by which individuals find recognition in the overlapping social, political, and moral communities that constitute the broader collective. Though it might not always feel this way, in other words, we do not dedicate ourselves to work out of economic necessity alone; social and political norms tell us to. In recent years, thanks to dramatic advances in industrial productivity and automation, this contradiction has become hard to overlook. As the political scientist James Chamberlain has observed, "The value of employment in contemporary society far exceeds its function in distributing material rewards and enabling us to satisfy various needs and wants" (Chamberlain 2018, 2). For feminist theorist Kathi

Weeks, the conclusion at hand is clear: work produces not only goods and services but also social and political subjects. And in so doing, it crowds out other possible modes of political, social, and cultural community. In work societies, we become a *we* first and foremost as workers (Weeks 2011).

To be sure, only people whose activities are recognized as work can join this *we*. Work societies of all kinds have historically used this distinction to police who belongs and who does not and to shore up established hierarchies of race, gender, sexuality, class, and ability. As such, many people whose lives are consumed by labor (or toil) are nonetheless excluded from full civic participation in the work society. But given the difficulty that even the most privileged individuals experience in trying to opt out of the work society, the question remains: Why do we prioritize work above all else? In exploring this question, it is helpful to recall that work was not always the center of social life in the West. For much of antiquity, in fact, work was considered a curse. Plato, for instance, equated manual labor with slavery, and Aristotle argued that work distracted people from the cultivation of virtue, life's truest purpose (Svendsen 2016, 19). Work continued to be a burden into the Middle Ages in Europe, though the monastic tradition lent it the additional freight of religious penance. It was Martin Luther who, during the Reformation, brought the mantra of "prayer and work" out of the monastery and into society at large. No longer a cloistered practice of atonement, a lifetime commitment to labor in God's name became the basis for a universal work ethic (Ciulla 2000, 42-3). The secularization of this ethic is Max Weber's famous subject in *The Protestant Ethic and the Spirit of Capitalism* (1905). There Weber argues that the "coming of the modern economic order" evacuated the Protestant work ethic of its religious ethos and reduced it to a "worldly morality" of rational conduct. By the twentieth century, this "joyless lack of meaning" no longer needed the "transcendental sanction" of the Reformation. "The Puritan wanted to work in a calling," Weber concludes. But "we are forced to do so"(Weber 2001, 25, 123).

Weber may have been too pessimistic, however, both about the work ethic's "transcendental" hold and about its staying power. Indeed, as a psychological justification for why we work so much, the Protestant ethic has not disappeared so much as it has taken new shape over time. In the Fordist-era of factory and assembly line production, for instance, men embraced the work ethic not to be looked favorably by God but to shore up their masculinity and find social recognition as "breadwinners." For Irish and eastern European immigrant men, moreover, embracing the work ethic was also a means of "becoming white" (Roediger 2001). In our moment, a handful of examples should suffice to show that rumors of the work ethic's demise have been greatly exaggerated. Consider, for instance, how progressive activists mobilize the moral vocabulary of work to make the case for immigration reform. Undocumented immigrants deserve a pathway to citizenship, this argument goes, because they have already demonstrated their personal commitment to hard work. A similar dynamic is at stake in the blurring of work and personal life that defines what Richard Florida dubbed "the creative classes" (Florida 2002). Clearly, to "discover oneself" in work is not to escape the power of the work ethic. It is to embrace economic productivity as the truest measure of individual authenticity. From the so-called creative class to the gig economy and the culture of mindfulness, the work ethic lives on.

In addition to the work ethic, work societies also find a conceptual touchstone in what has come to be known as the labor theory of value. At its core, the labor theory of value maintains that only labor can produce economic value. We can only know what a good or commodity is truly worth when we know how much labor has gone into its production. Adam Smith's *Wealth of Nations* (1776) is the locus classicus for the labor theory of value, but Karl Marx also looms large. For many commentators, in fact, the Marxist project tout court can be summarized as an effort to return work – and all the value it creates – to the workers. As one famous interpreter of Marx's philosophy put it, labor "is the self-expression of man, an expression of his individual physical and mental powers. In this genuine activity, man develops himself, becomes himself; work is not only a means to an end – the product – but an end in itself, the meaningful expression of human energy; hence work is enjoyable" (Fromm 1961, 42-3). This is a familiar, if somewhat caricatured, Marxist argument: we must tear down the economic structures that alienate us from the very wellspring of our humanity – our labor. But a similar take on the labor theory of value is also implicit in the management discourse of resilience we have already touched on. The scholar Peter Fleming has called this approach the "just be yourself" style of management (Fleming 2009, 8). Workers are asked to bring their "authentic" selves into work, thus incorporating "the whole person into the production matrix" and making both individual and company more resilient in the process.

From political theory to Marxist activism and managerial practice, anti-work theorists begin by interrogating the cultural forces that have led us to prioritize work above all else. Only after making the familiar unfamiliar and the common-sensical strange are we in a position to ask what comes next. What other ways of organizing political, social, and cultural community come into view when work is no longer the horizon of identity or belonging? Pandemic-era mutual aid projects offer a glimpse of one such future.

MUTUAL AID

The great resignation may not have been quite as unprecedented as the often breathless reporting in the popular press would have us believe (Fuller and Kerr 2022). But public discourse itself certainly feels different, especially with the arrival of COVID-19. Not only have critiques of the work society become increasingly mainstream, but they have also heightened public awareness of social inequality – and focused attention on the needs of those hardest hit by the pandemic. In this context, nagging questions about why work should matter so much have spilled over into perhaps even more urgent questions about how we should be spending our time. Hence the upswell of community-based initiatives during the pandemic, from food banks to free meal delivery services, seed swaps, and the home-based manufacture of personal protective equipment (PPE). There isn't yet a definitive study on the subject, but participants on the ground argue that COVID-19 has sparked the largest and most diverse mobilization of "regular people" helping each other that has ever happened (Sitrin 2020, xvii). From community support for people with high needs and low access to resources in Iraq to "solidarity shopping" in Italy and efforts to fight the re-institutionalization of people with disabilities in South Korea, new forms of community and care have found a reach as global as the pandemic itself.

Observers have adopted the term "mutual aid" to describe this broad range of grassroots projects. On the one hand, mutual aid is a useful shorthand because it underscores a baseline ethos shared across a diverse set of initiatives – people helping people in a time of need. On the other hand, the term mutual aid also draws a connection between community responses to COVID-19 and earlier moments of social cooperation, from Hurricanes Katrina and Sandy to the Black Panther Party's free breakfast programs and even the mutual aid societies established by free people of color in North America as early as the eighteenth century (Solnit 2010). For some activists, the term mutual aid also signals a specifically anarchist understanding of social solidarity. Theorists in this camp find a touchstone in the work of Russian writer Peter Kropotkin, whose book *Mutual Aid: A Factor of Evolution* (1902) argued – contra social Darwinists of the day – that "mutual support, mutual aid, and mutual defense" play a more important role in human life than the competitive struggle for survival (Kropotkin 1902). Today, left-aligned and explicitly anarchist activists see mutual aid as part of a two-pronged political agenda. As the lawyer, activist, and writer Dean Spade argues, mutual aid is a means of responding to pressing needs and contemporary crises while also organizing to remake the structures that create such needs and crises in the first place (Spade 2020).

Though the issue has not garnered as much attention in the mainstream press, questions about work – what it is and why it matters – have also been central to COVID-era mutual aid projects. We can look briefly at two case studies to illustrate what is at stake here. The first case study is D.C. Mutual Aid Network, a coalition of community organizers and activists in Washington, D.C. Originally convened in 2015 by Black Lives Matter-DC to combat police violence against African Americans, D.C. Mutual Aid Network expanded during the COVID-19 pandemic to address a host of other social issues, from food insecurity to domestic violence and housing discrimination. From the beginning, participants had a nuanced sense of the project's urgency and impact. As one activist posted to social media:

> It's been one of those weeks. One of the longest weeks of my life. Since Tuesday I helped build the foundation of a hyper-localized bloc of organizers. The Ward 6 Mutual Aid Team has utilized the model initiated by an amazing group of D.C. organizers who formed the D.C. Mutual Aid Network. This grassroots, community-led effort initiated by Black Lives Matter D.C., No Justice No Pride, Black Swan Academy, BYP100 and others formed in response to the inevitably that our systems will not protect, support, or sustain the lives of poor, working class Black and Brown people here in Washington, D.C. (Jun and Lance 2020)

But while participants and community members recognized the necessity of the activism and outreach endeavors performed under the banner of the D.C. Mutual Aid Network, the question of what kind of work they were doing was far less clear.

Across its various activities, members of the D.C. Mutual Aid Network were at pains to distinguish their efforts on behalf of the community from *charity work*. The group's Facebook page makes this much clear. "Mutual aid is people working together to meet each other's material needs (food, housing, healthcare, etc.)." Charity work, on the other hand, is hierarchical and reciprocal. It subordinates the needs of the recipient to the generosity of the giver, while also requiring that anyone who asks for help first show that they are "deserving." Charity recipients might be required to attest to their sobriety, prove their citizenship status, or – in the case of state-based welfare and SNAP benefits – demonstrate their willingness to work. Community initiatives like D.C. Mutual Aid Network, by contrast, "strive to be transparent, collaborative, and powered by the people." This work is not "protecting each other, not policing each other." Rather than requiring beneficiaries to demonstrate that they deserve to be helped, "it requires each of us to actively create the world we want to see" ("DC Mutual Aid Network" n.d.).

If mutual aid is not charity work, neither is it "gainful employment" in any conventional sense, as a second case study illustrates. A grassroots network spanning England, Scotland, and Wales, Scrub Hub was formed in March 2020 to produce the PPE that healthcare workers wear to prevent cross-contamination. Scrub Hub volunteers – mostly women – sourced material, arranged deliveries, and sewed scrubs in their homes. The more productive they became, however, the more Scrub Hub volunteers found themselves treated as cheap labor. The National Health Services Trusts, which distributed the PPE made by Scrub Hub, imposed hierarchical management and quality control systems. These measures not only made the activities this "army of volunteers" performed more difficult, but they also encouraged Scrub Hub participants to think of themselves as "service providers" and of the healthcare workers they were helping as “service users” (Aidan and Sam 2021). In an effort to combat what amounted to a recasting of mutual aid as wage labor, Scrub Hub groups endeavored to bring healthcare workers into the production process by “centering their designs around the immediate needs that the workers reported, such as the requirement for long sleeved plastic gowns as opposed to the flimsy sleeveless aprons provided as standard, or by circumventing the institutional scrub distribution hierarchy which left many social care providers ill-equipped” (Lachowicz and Donaghey 2021).

Taken together, these ethnographic vignettes of the D.C. Mutual Aid Network and Scrub Hub shed light on the anti-work politics of mutual aid projects writ large. In endeavoring to counteract the assumption that mutual aid is charity work, the D.C. Mutual Aid Network fostered a mode of social relation irreducible to reciprocity. Work societies are bound by the assumption that you only get out what you put in; your status in life and position in the world correlate directly to the quality of your labor. Dispensing with the morality of the market, mutual aid imagines collective life as a far more delicate weaving together of social interdependencies. Reciprocity gives way to mutuality: the obligations, responsibilities, and support that are irreducible to immediate recompense. For its part, Scrub Hub embodies an anti-work politics that goes beyond negative conceptions of freedom. Instead of seeking “freedom from work,” participants sought active and meaningful involvement in determining the paths their lives might take – and the kinds of connections they might forge with others.

ANTI-WORK THEORY AND ETHNOGRAPHIC PRACTICE

This essay has aimed to take stock of the rise of anti-work politics in mainstream culture by tracking several related strands of thought and practice. We began with the growing acknowledgment – in public discourse, on social media, and as a matter of individual intuition – that work might not be inherently meaningful. From the viral misgivings that fueled the Great Resignation, we turned to the theoretical underpinnings of anti-work theory and to recent efforts to imagine mutual aid as an alternative to the work society and the managerial notions of resilience that prop up the work society today. There are clear lessons for ethnographers in industry in the path taken thus far. Indeed, this essay’s central takeaway is less a conclusion than a point of departure. Our task is to help clients understand that anti-work sentiments, however articulated, are often less about declaring one’s “freedom from work” than about actively constructing the conditions of one’s life. And as with pandemic-era mutual aid, the goal is often not to enforce reciprocity – everyone gets out what they put in – but to create the conditions for collective support. Once we take this perspective on board, the next step for ethnographers in industry is to better understand what and how people want to build lives without work at the very center.

But ethnography, of course, is never just a means to an end. Being in the field is also a chance to rethink our preliminary assumptions and theoretical aims. I want to bring this point home by turning briefly to two projects on Gen Z internet culture that my colleagues and I undertook on behalf of clients in social tech. In the first of these projects, desk research suggested that many young Nigerians have trouble accessing the gig-work platforms they feel could help redefine their relation to work and to the economic systems they have inherited. It would have been easy to conclude that these signals point to unmet needs and new opportunities in upskilling and local worker verification programs. But contextualizing desk research with interviews in the field brought a new perspective to light, suggesting that young Nigerians’ efforts to rethink the place of work in their lives was bound up with broader shifts in attitudes toward institutional authority. Just as work was losing its central place as the arbiter of social value and meaning, many young Nigerians were beginning to question traditional institutions like family and the government. As one informant told us, "The youth today identify as the 'Soro Soke' [speak out] generation. For my parents growing up, speaking was a sign of disrespect. They were taught not to speak their minds. But today, technology is opening the lives of young people and giving them the power to speak out against the political elite and the status quo." In order to grasp shifting attitudes toward work in Nigeria, we advised the client, it is important first to understand work as a social institution whose authority is no more set in stone than is the authority of parents and political elite with which it is interwoven.

In another project, also for a tech client, our team was tasked with understanding how Gen Zers engage with eating- and health-related information online. We sent ethnographers across the US and India to better understand the social worlds and information pathways of young users. Given our experience with the Nigerian market, we were not surprised to learn that questions of work were top of mind for Gen Zers in the US and India when it came to eating and health. Many participants approached eating and health as a means of accessing what they took to be the "good life," and often enough the "good life" involved working less or not at all – but still eating well (and looking good). At the same time, though, our experience in the field underscored a less obvious but perhaps even more consequential learning from anti-work theory for ethnographers in industry – namely that our commitment to the ideal of work dies hard. As with Weber, so goes Gen Z: even among the most staunchly anti-work members of this younger generation, the work ethic is less likely to disappear altogether than it is to transform into something else. As one key participant in the study on eating and health put it, "It's a flex to spend 12 hours in the office and post about it online. But it's also a flex to spend five hours a day at the gym and to let everyone on Instagram and TikTok know." The upshot, this participant intuited, is that it's not enough to give up on flexing at the office if you haven't given up on flexing at the gym. You're not truly anti-work if you merely transfer the work ethic to other parts of your life. That's not the good life; that's not real resilience.

It can be difficult, of course, even for the most sophisticated theorists of the work society, to know when our love of working out is actually just love of work. But grappling with such distinctions – on the ground and in the field – is a job for ethnographers to do.

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Against Resiliency

An Ethnographic Manifesto

LAUREN MONSEIN RHODES, *Cisco*
JILLIAN POWERS, *JP Morgan Chase*

Using ethnography as an analytic tool to examine the concept of resiliency, we call for a shift in our practice and praxis. Research subjects and ethnographic practitioners are tired of working against and thriving despite. We are tired of being seen as resilient in a world that demands so much from us and only values our contributions if they align with dominant views and world systems. We are tired of being relied upon to provide answers and solutions to the issues presented in front of us. In this manifesto, we demonstrate and argue that resilience, as a category of human agency, shifts responsibility to the person being resilient and away from the systemic problems that created the need to be resilient in the first place. By reifying resilience in our research and our findings, we celebrate survival despite the psychic and somatic labor and toll on resilient actors. As practitioners, we are drained by being and witnessing resilience. As ethnographers who work, we must imagine with people past resiliency to a place where we all thrive. We approach our methods and our engagements with compassion, mutual aid, and exploration.

PROLOGUE

Lauren:

Being of black African descent in Latvia and doing research on individuals of black African descent in Latvia means that everything is personal (visceral). The stares that your subjects describe (not the usual stares, these ones seem to pierce your very soul and say "you are not one of us"), are the same stares that you are on the receiving end of every day as you walk down the street. The discussion of blackface and appropriation in Latvia are not ones that are done through the lens of you being American, but of being Black American. You become emotionally exhausted by the discourse, by your research, but it is not because you are far away from your family or because field work is not always enjoyable, it is because your lived experience is shared by many of your subjects. Resilience is futile because you need to cry, you need to express your frustrations, you need to allow for social anxiety in the face of the stares, microaggressions, and mutual empathy.

Jillian:

What started as my favorite part of fieldwork turned into my coping mechanism. We had only a few days to complete our notes, and usually the time crunch spurred me to action. I love writing fieldnotes, especially under pressure. But I was already behind. As I visited the houses of people found by a recruiter about their consumer behavior and "failures of adherence," emails from my titi sat in my inbox unanswered. I drained my second glass and closed my eyes, placing the cool hotel crystal against my forehead. My cousin was not a candidate. I couldn't slip him any money or find a way to get him access to the treatment we were trying to understand. Feeling the condensation on my skin, I let the day come back to me. The car parts and children's toys that littered the patchy side lawn. The kitchen in disarray, the lumpy sofa that smelled like too many animals and a house overwhelmed. I gestured to the bartender, he refilled my glass for the third time (on the client's dime). Only two more markets with at least six more interviews in each to go…

INTRODUCTION

Alone in our apartments, at the hotel bar, on a bench in the emptiest room at the museum, or a rental car in a nondescript strip mall next to a nondescript Panera Bread, we break down. Ethnography takes its toll. Away from the eyes of our friends, families, clients, and collaborators, we face our feelings of helplessness, exposure, liability, and shame. We sit, focus on our breathing, and try to contain within our bodies, the tumult of lived experience. Other times, we silently scream into a pillow. Either way, the day continues, and the work gets done. We adjust our corporate drag, check our makeup, and deliver insights.

As women of color and social class traversers, we are constantly tasked with being resilient: “a strong Black woman”, “a strong Latina”, “fearless”, and any other cliched phrase that is placed upon women and women of color. This is not liberating, it is not freeing, nor does it give us strength. It is exhausting to constantly prove our resilience and our worth to ourselves and others. To disguise the impact of our traumas or the traumas that we must live through, or to hide how vulnerable we feel in the field, at work, and in the world. In many ways, the same could also be said for our subjects – they too are tasked with proving their resilience, providing a narrative and demonstration to researchers who are already asking so much of them.

We felt compelled to write this manifesto together, with compassion, to call more tired practitioners in. The authors that we cite and the ethnographic subjects that we focus upon, all bring to light the pitfalls of resiliency. In global development, industry or civic projects, resilience is a positive response to hardship that can be translated into insights and then scaled. Resilience, as Rose and Racadio (2011, 299) detail, is where people “manipulate structures or resources to overcome barriers”. But, as critiques of our foundational texts and Fanon (2021/1963) remind us, liberation does not always mean liberation from day-to-day realities, and the outside ethnographer might not know how to assess resilient acts within the performative field of our ethnographic engagements.

Insights provided by these readings and our personal experiences in the field and on the job show us that resiliency, as a category, should be engaged with caution. As we show, by reifying resilience in our research and our findings, we celebrate survival within broken systems, despite the psychic and somatic labor and toll this takes on resilient actors. As Bracke (2016a, 69) details, “the notion of resilience does indeed assume damage and impact (…) it is also conceptually designed to overcome vulnerability – to contain and evade it, to bounce back from it, to minimize its traces, to domesticate its transformative power.”. To domesticate vulnerability means that we are taming it without harnessing its power. We are taking away the ability to be vulnerable, to allow for vulnerability. We argue against resiliency because, as ethnographers, we cherish and honor the transformative power of vulnerability itself. We don’t want to contain or evade vulnerability. We don’t want to domesticate it because domestication of vulnerability isolates us. We don’t want to bounce back, because bouncing back minimizes the traces of harm and suffering.

As practitioners, we are drained by being and witnessing resilience. As ethnographers, we must imagine with people *past* resiliency to a place where we all thrive. We must approach our methods and our engagements with compassion, mutual aid, and exploration. Vulnerability is not a weakness, nor should it be domesticated – it is a powerful testament to our embodied histories and selves and the creative human force within us that allows us to signify and tell our stories. Without vulnerability we are simply academic subjects: projected upon, analyzed, and our daily lives made invisible. Guided by Black, indigenous, and queer approaches to practice and method (e.g. Dennison 2012; Johnson 2008; Povinelli 2006), we believe a slow, and compassionately critical ethnographic practice can serve as the solution to the problem resiliency demands. We look to our own experiences to center marginalized ethnographers, living their own version of a double consciousness; code switching "outsiders within" in the boardroom, field site, and team meeting. Because of this, we have learned that when our work develops deep relationships, and allows people to tell their own stories, it can, as Cervantes (2020, 134) states, "(...) emphasize the importance of examining the individual story within the larger collective to understand connections and tensions". Only then, can we find joy within our ethnographic practice and the process of providing insight and transmitting knowledge.

RESILIENCY IN ACTION

As we professionalize our training and harness our creative power, we call for a shift in practice that centers compassion. We must embrace vulnerability, seek to build connection, and interrogate the power structures that lie within our work and *at* work. What follows is a literature review of the origins of the discourse of resilience and how it has been applied to three areas: systems, services, and ultimately, people.

Systems & Services

The term resilience, in the physical and biological sciences, denotes the characteristics that make a material or system return to a state of equilibrium following a moment of stress (Gordon 1978; Tarter & Vanyukov 1999; Norris et al. 2008). Versions of this meaning inform and shape recent developments in business operations and technology enablement, specifically around supply chains. As manufacturing became a global venture, companies prioritized efficiency over redundancy and drove down costs by implanting "just in time" sourcing to reduce inventory.[1] This approach opened operations up to new and different risks, which were further exacerbated by the Covid-19 pandemic. Uncertainty over demand, long delays from suppliers and logistics (e.g. recent calls for a railroad strike in the U.S.), shifts in labor and the workforce, geopolitical tensions and war (like what we are seeing in Ukraine), and changes to partner relationships and the availability of resources impact the bottom line. These disruptions can erase half a year's profits or more,[2] and require "a new paradigm for competitive resilience" within the supply chain, where technology can help anticipate disruption, minimize exposure to risk, respond quickly, and remain responsive to customer needs.[3] In this vein, resiliency hinges on identifying disruption risks, and minimizing or avoiding them to maintain a steady state of operations and consumption.

This definition has also trickled into social services, pandemic responses, and disaster risk reduction strategies. Instead of focusing on traits of resiliency (as we will discuss below), service design in these veins focus on developing the resiliency of systems in order to "make a multiplicity of interactions possible" (Manzini, 2011:3) with people through community networks and city-supported infrastructure (Radywyl 2014; Fullilove 2005; Klinenberg 2002, 2012). Research and interventions examine pathways towards positive outcomes (Cowen et al. 1997; Luthar 1999), so prevention and intervention strategies can be developed for those facing adversity (Cicchetti and Toth 1991,1992; Luthar 1993; Masten et al. 1990; Rutter 1990).

For example, people who work in traumatic or stressful contexts, like the military or in medicine, must develop resiliency to mitigate the emotional toll, burnout, and challenges of their highly demanding jobs. Research has been directed to develop programs or apps to support those in transition between these contexts and address attrition in these fields (e.g. Litz et al. 2009, Steenkamp et. al. 2011). These also include programs and policies around climate change, natural disasters, and pandemics, as well as the "well-being" and "wellness" services seen in universities and corporations. These interventions, however, focus mostly on individual approaches to stress management and mindfulness.[4]

People

Across the social sciences, the topic of resilience has captured the imagination of researchers, practitioners, program and policy creators, as well as service designers who draw mostly from the disciplines of psychology and social work, to focus on personality traits, personal agency, positive outcomes, and positive functioning in times of high stress, trauma, scarcity, and the acts and processes of survival despite great odds and adverse conditions (e.g. Glantz 1999; Kaplan, 1999, Shaikh & Kauppi 2010, Luthar, Cicchetti and Becker 2000, Werner & Smith 2001). As people take action and make choices within resource constrained environments, they draw upon personal and social resources at their disposal.

Resiliency when used to describe people, their actions, or their processes speak to the relationship between an individual and their social world, and their positive and self-directed acts of resistance and survival (Sims-Schouten and Gilbert 2022). From genocide survivors to the poor, single mothers to downsized white collar office workers, and teenage single parents or those displaced by climate disasters, people have used (and scholars have documented) how the parameters of resilience provide a structure of meaning for survival and positive framings of painful circumstances (e.g. Kennedy 2005). Whether suffering from a challenging home life due to parental mental illness (Masten & Coatsworth 1995, 1998), maltreatment (Beeghly & Cicchetti 1994; Cicchetti and Rogosch 1997; Cicchetti, Rogosch, Lynch & Holt 1993), urban poverty and community violence (Luthar 1999, Richters & Martinez 1993), chronic illness (Wells & Schwebel 1987) or catastrophic life events or even Nazi concentration camps (Frankl 1962,1978), resilient people are able to construct meaning and find purpose within suffering through their free will and deliberate choices.

For example, individual traits and personal qualities like high levels of autonomy and self-esteem, are thought to influence and lead to positive outcomes despite childhoods defined by poverty, mental illness, or substance abuse (Werner 1982; Masten and Garmezy 1985). Research in school settings links academic progress to positive student self-perceptions – the belief in one's ability to overcome "the system" can help students maintain their drive despite persistent effort and setbacks (Martin and Marsh 2006). White collar professionals experiencing career shifts and downsizing due to new technologies and industrial changes like outsourcing, find ways to accept their circumstances, "by changing how they think and describe their jobs" (Moellenberg et al. 2019, 106). Resilient individuals effectively seek support, use humor to temper reality, manage negative emotions, and motivate themselves to keep going (Fisher & Law 2020). They manage stress, learn from their environment, and find meaning in circumstances that might be otherwise overwhelming or defined by injustice and inequality.

Resiliency is also used frequently to speak about women and their strategies for navigating the world from an unequal power position. For example, minority women charting out successful career paths or navigating their everyday as undocumented residents expressed optimism, faith in themselves and God, and their strong relationships and values to reframe the challenges they faced and their refusal to be marginalized (Bachay and Cingel 1999; Campbell 2008). Women in long-term abusive relationships found meaning and pleasure through their role as a homemaker, and their relationships with others (Zink et. al. 2006). Women experiencing menopause were able to demonstrate resilience during this period of transition by reflecting on their life experiences and relationships to others, defining menopause on their terms (Kafanelis et al. 2009).

Although individual resilience can be undermined by excessive challenges, others can assist in making the challenges manageable, revealing how resiliency is an individual act shaped by one's social world and human bonds. Resilience can also come from external factors like social networks, strong kinship ties, as well as martial, social and cultural capital, thus emphasizing the structural and material conditions which shape and are shaped by resilience. Environment and the social system shape the choices and actions people make on their journeys of survival and resilience (Rose and Racadio 2011). But it's not merely the availability of support or the scarcity and challenge of the environment, it's the human agency within these contexts that allow people to act creatively and purposefully as autonomous and self-directed actors (Lister 2003) that make them resilient.

By justifying their behavior as an active response, these studies reveal how individuals reclaim a sense of agency in a shifting world. Resiliency thus is a personal and productive choice of reclamation., one that emphasizes an individual's ability to cope with crisis, adapt to hazards, and bounce back: resiliency focuses on the strength of individuals and puts a positive spin on the coping mechanisms of people and communities.

THE PROBLEM OF RESILIENCY

As the Nap Ministry, an organization founded in 2016 to promote community rest and resistance, explains, "corporations and organizations love the word resilience. We don't need to keep being resilient, we need the terror of white supremacy, sexism, capitalism, and patriarchy to cease. Resilience be code for 'let me be tough and strong so this world can continue fucking with me'."[5] What the Nap Ministry labels as the underlying "code" of resiliency reveals the assumptions within this framework when it is applied to people and communities. Resilience is not a pathway to liberation, instead it is a result and requirement of oppression and subjugation. To examine the use and function of resiliency, as Anthropologist Roberto Barrios (2022, 29) argues, "is to make grand statements about how the social world works and how people relate to their environments; topics that anthropologists have researched since the discipline's foundation in the late 19th century."

Embedded within resiliency is a statement about the power of individualist actions, traits, and perspectives that can be accessed and deployed despite unequal relationships to power and unequal access to resources. As the literature review reveals, resiliency emphasizes individual responsibility; a boot-straps version of overcoming that places the burden on an individual's adaptability. These individual acts take place upon a neutral and ahistorical social and geographic field where statis, return, and success are equally accessible (if you bring the right attitude) and most importantly is an adequate response to the challenges of today. Within the neoliberal world of deregulation, free-market capitalism, and a reduction in spending for social services, who else can you turn to if not yourself?

Resilient actors, as Rose and Racadio (2011, 299) detail, know how to "manipulate structures or resources to overcome barriers". Yet, their acts are unsanctioned and outside the purview of existing social and institutional support and systems. Resiliency, therefore "either directly oppose the ways structures are intended to work, or they address gaps in the structures." (2011, 303). By improvising, people are compensating for systemic failure. This Anglo-Saxon and neoliberal understanding of resiliency, where agency, and a positive mental attitude are all you need to overcome any obstacle set in front of you, diverts attention away from the root causes and historical and political processes that make some people vulnerable in the first place and why certain populations are more likely to exist in vulnerable social positions in our broken system.

It does not go over the heads of the people called resilient, what that means and how paternalistic it sounds, as well as who are usually labeled as resilient, and by whom. Resiliency tends to minimize the impact of systemic white supremacy (Joseph-Salisbury 2018; Rhamie 2012), and can be seen in Heniz' (2018) research on a program designed to address inequality in the South Side of Chicago. While the local foundation supporting the intervention was concerned with issues of systemic racism and gun violence, these issues are hard to tackle, require tact, and can be deeply political and tense across racial and economic lines, especially as outsiders attempt to come into the neighborhood and make pronouncements and program decisions. Instead of larger systemic issues, the project team focused on one demographic and their resiliency: "If youth in this age group were able to develop rich, meaningful and sustainable livelihoods, the project team believed, race inequality and gun violence would decrease" (Heniz 2018, 567). Yet this "unseasoned team of non-local, mostly white, international expert-actors" struggled to connect and understand the Black community they engaged with and sidelined their rich experience of social engagement and activism, leading to mistrust and tension. This is all too familiar of an encounter, where "members of ethnic minority communities are defined as in need of resilience, while at the same time their experience of structural racism is ignored or erased" (Sims-Schouten and Gilbert 2022, 85).

The use of resiliency maintains the status quo and keeps people and communities vulnerable because, "resilience paradigms 'naturalize' and reproduce the wider social and spatial relationships which generate turbulence and inequality" (MacKinnon and Derickson 2013, 254). First, because the return to stasis was never a good position for the vulnerable to begin with, and second, because the underlying root cause is never addressed or even discussed, leaving the social context, grounded experience, and cultural and historical landscape unexamined. As anthropological critiques of resiliency within disaster scholarship reveal, "the concept of resilience does not mitigate disasters but serves as a mechanism for the maintenance of the system that creates them" (Barrios 2016,29). For example, the use of the term to describe Haitian survivors after the 2010 earthquake justified insufficient aid and contributed to the mismanagement of the multi-billion-dollar response. In fact, the top-down, NGO-dominated approach and intervention caused more harm, and triggered a range of unintended consequences like increased gender-based violence and insecurity (Schuller 2012, 2016). Without systemic transformation, and a critical understanding of race, imperialism, and colonialism as well as community and local involvement in recovery programs, Haitians were left vulnerable, a condition that continues to this day.[6] Thus the label of resiliency, especially when pronounced from above increases dependency and keeps people vulnerable to hazards.

This is echoed by Barrios (2016, 33) who declares that defining "... what it means to recover successfully or rebuild better is sometimes more of a matter of discursive power, hegemony, imagination, and the politics of knowledge, more than it is about helping…". As long as resiliency is a label placed upon minoritized and marginalized populations by dominant, white, middle-, and upper-class voices, long-term transformation will be limited. Some are othered and labeled as possessing the capacity to continue, and in need of support. Others aren't even seen or acknowledged, dismissed as failures and overlooked. Yet, any intervention grounded in resiliency will continue and perpetuate the trajectories that leave people vulnerable. The resilient will continue to survive (barely), and those perceived as possessing a reduced capacity will continue to be ignored. These acts are not sustainable, even if we work in industry and seek to "operationalize," "embed" or "deliver." Resiliency exposes the precarious models of success, that for some to win, others must fail, and some must show more "grit" to even survive.

The frustrations, burnout and moral injury people face are based upon structural factors outside of their control. Yet, "we tend to blame each other and ourselves for the failure of the social structures we inhabit," states Laura Kipnis (2004, 35). We also tend to identify within the individual their successes, even if they are hard won and collectively earned. A focus on resiliency celebrates the extreme acts people deploy to overcome barriers. For example, a wellness program asking me to meditate for five minutes daily can never address the systemic and collective strains the neoliberal world places upon us. A wellness program does not allow for a probing of these traumas or a deeper "meditative" exploration of how these traumas impact one's state of being and where one can find accountability and healing. EPIC 2021 keynote speaker, Panthea Lee in a *Medium* post titled "Towards a politics of solidarity and joy", talks of confronting and tending past traumas through somatic abolitionism (versus, say, a mindfulness training). Lee (2020, np) argues that people

> …develop protective, automatic responses to oppressive social conditions and traumas both violent and quotidian. We might, for example, numb ourselves, or become smaller in order to appease those that threaten us. These instincts are learned and culturally shaped; over time, they become automatic and coded in our soma. Left unaddressed, our senses of connection and of dignity begin to slip away – in short, our very humanity is threatened.

As practitioners, we must recognize these somatic tendencies in both our subjects and ourselves, especially when we see these tendencies in marginalized populations, and understand that resilience is not the answer to the social conditions to which Lee refers. Practitioners need to stop describing people as resilient and move towards an understanding how systems and structures create the hazards that demand resilience. A way to do this, we argue, is through ethnographic vulnerability. For us, as ethnographers, we are sometimes asked to not put our feelings to words in our field reports or business presentations – it is not considered "professional". But, perhaps, openly writing and talking about our vulnerability (and that of those whom we research), is something that we should do more often. It is, after all, an important part of acknowledging embodied histories and stories.

Ethnographic Subjects

The truth of the discourse of resiliency is that it does not allow us or our subjects to be vulnerable. Resilience asks for us to hide our vulnerability because it is a sign of weakness, of not being able to show our "strength" or "flexibility." Or, resiliency asks us to perform. In ethnography, resilience is utilized to describe how indigenous groups are able to maintain their ways of life in the face of colonial actors, imperialism, and "industrialization". One can only look to the foundational texts of anthropology – Malinowski (1922) and Mead (1928), among others, to see how they celebrate their subjects' ability to remain "primitive", "the same", and "untouched", as though they have not been impacted by the outside world. This continues into the realm of ethnographic and natural history museums, some of which were either founded by or supported by the "collections" of anthropologists such as Kroeber and Boas – either through the addition of living indigenous subjects as exhibition content (Kroeber) or thematic and taxonomic organizing of items illegally taken from their original owners (Boas). Many of these museums *still* fall into this trope (until they are challenged by former colonial subjects and their descendants). But, just because the practices of the ethnographic subjects of the past are seen as resilient – it does not mean that they actually are or were resilient. And once their countries declared independence and ostensibly threw off the reigns of colonialism, it did not mean the liberation of their bodies and minds. This is an area that postcolonial critique takes to task, as the mere term postcolonial still centers colonialism within the histories of subjugated peoples. It also does not account for settler colonialism and/or continuing imperialism (McClintock 2015). Additionally, the continuation of the legacy of colonialism within the minds of the "formerly" colonized cannot be forgotten nor translated into a societal transformation overnight (Thame 2011).

For Frantz Fanon, there is a critique to be had about the postcolonial self and body politic. Fanon, although he was not an ethnographer, is still frequently cited and called upon by anthropologists and sociologists. In *The Wretched of the Earth*, he (1968/2021, 114) states that

> The peasant who continues to scratch out a living from the soil, the unemployed who never find a job, are never really convinced that their lives have changed, despite the festivities and the flags, however new they might be.

Liberation, and resilience in the face of past colonial aggressions, is only resilience on the surface. Behind those "festivities and the flags", are human beings who just want to keep their heads down, live, and not put on a show for an audience. There is also the question of what goes on behind closed doors. While Fanon does discuss the types of anxieties (one could say psychosis) that plague individuals of black African descent in a white European world in his 1967 classic, *Black Skin, White Masks*, he does not go outside the realm of what is going on inside one's mind. There is no crying in the streets or silent pillow screams mentioned in his text. Vulnerability, in his case, is something that one feels, but does not express.

Understanding the relationship between vulnerability and resilience is essential to understanding our subjects, as well as the legacy of our work and disciplines. Texts by more contemporary scholars, particularly those from ethnographic backgrounds, dive into how discussions of vulnerability are often ignored in the discourse of resilience. Bracke (2016a, 2016b) goes against this tendency by exploring vulnerability and resilience within individual (and collective) agency. Bracke intertwines the subaltern (via Spivak, 1984) within a critique of resiliency, as a way to unpack the nature of agency and the road from resistance to resilience. While Bracke (2016b) sees a resistance-resilience shift, it does not mean that resilience is considered liberating. Instead, resilience is a way "to 'make do' with the conditions one finds oneself in, ways to survive, is something the subaltern does – until she does not" (2016b, 14). This idea of "making do" echoes Fanon's sentiment about "the liberated" and points us in the direction that resiliency is simply a way to survive within the capitalist system – it does not allow for adaptation, it is static, and it is not *liberating*. What does this turn mean for us as ethnographic practitioners? How does it apply to our experiences in the field and interactions with our subjects? The task of the ethnographer, then, is to take a deep look into ourselves and our observations, interactions, and analyses.

Ethnographic Practitioners

The move from subjects to practitioners means that we must take stock of our positionality, alongside our ethnographic practice. We celebrate our praxis and position. Our methods are playful and human, they inspire poetry and creativity, shared support (through gestures both big and small), bring warmth, and hopefully critical honesty (Salami 2020). We lean into vulnerability in our ethnographic being to broker pathways towards shared recognition and human connection – past the survival that resiliency expects.

As women of color, nay, as *Jewish* women of color in the field, we have a specific set of life histories and experiences that we bring to the field – and to industry, which is still (despite many an effort) predominantly white European cis-male and exudes a white privileged-take on how the world, society, and products work. We are systemically undervalued and underpaid. To continue to exist within such a system, in itself, can create a feeling of loneliness and isolation – the classic "otherness" that is often explored in anthropological, sociological, and cultural studies texts.

Otherness and loneliness are not just the realm of social scientists or book-bound academics. In *Lonely City*, a text about the nature of loneliness, art, artists, and urban self-exploration, Olivia Laing (2016, 4) writes "Loneliness is difficult to confess; difficult too to categorize. Like depression, a state with which it often intersects, it can run deep in the fabric of a person, as much a part of one's being as laughing easily or having red hair". This carries into the field, where ethnographic practitioners – in academia or in industry, are often tasked with carrying out their research alone or in isolation. It can be while sitting in an empty apartment while working remotely or while traveling to a land wherein your only acquaintances are your subjects. You do not have to be single or a solo researcher to be alone – one can be partnered or traversing a team project and still be *alone, lonely*. As Laing (2016) points out, even Andy Warhol, with his lively Factory and tight knit group of hanger-on's, still felt and wrote about feeling alone in New York City.

THE SHIFT: TOWARDS AN ETHNOGRAPHY OF VULNERABILITY AND CONNECTION

Lauren:

I finally found peace when I allowed myself to fight back against some members of my dissertation committee who claimed that the words that my subjects spoke about their identity and experiences with discrimination were not true or misinterpreted. All it took was for me to turn to my community of friends—some fellow academics and anthropologists, others were from the community that I had built in Rīga, to realize that it was OK for me to feel sad, angry, and frustrated with how the academy treats the words of women of color, as well as the fact that my subjects' vulnerability (as shared with me and then readers of my dissertation) was also true and valid. This work that we do, it is important (and sometimes maddening), but we must not forget that we are not alone and that the powers that be may frustrate our acts, but they too can be pushed back.

Jillian:

"If no one is there to be an advocate, nothing gets done," my mother stated in frustration. My father was going into the hospital (again), and with all the new pandemic precautions she wouldn't be able to stand guard like she usually does. "He gets disoriented, he forgets, he gets agitated, what will happen when I'm not there?" Her voice broke as she held back her tears. I didn't know what to do, there was nothing I could do. I just listened. Anyways, I had to get to work, today was another day "in the field," even though the field now consisted of a virtual conference room, a digital journal, and never leaving my apartment. My phone chimed; it was one of our research subjects. After he completed his first digital journal, we had been going back and forth talking about the music and art he loved from the seventies. He wanted to know if I got the package he sent. Later that day, in a Context Lab a daughter-in-law shared with the group her experience taking care of her husband's elderly mother who was losing her vision. "I struggle," she shared. "You have to teach people, even the doctors, about what she's going through, otherwise they don't listen to me, they don't see how stubborn she can be." After our lab, we emailed back and forth. I thanked her for her honesty and grace, I thanked her for being open to listening to

> *others in the group when they noticed how she centered herself in her mother-in-law's care. I thanked her and then I shared my own story.*

For us to truly face down the discourse of resilience within our practice, we must make a shift in our thinking. Not just a shift, but four shifts. These four shifts are also our calls to action. We invite and welcome others to join us to rethink how we position ethnography, the disciplines of the social sciences that shaped us, the status quo, and, of course, our relationship to vulnerability. It is our hope that these shifts act as a guide to how we can, as ethnographers, better engage with each other and those that we study. As marginalized subjects (as women and religious and ethnic minorities), we ask our community of ethnographers to join us and imagine past resiliency so we can enjoy our practice (and get some rest).

Shift one: Ethnography as a method and our solution

We know that our disciplinary foundations are not angels. Sociology and anthropology are complicit in the colonialist project and industrial rationalization of modernity that categorizes some people as winners and others as losers and requires resiliency as an individual tactic for survival. Our own personal and disciplinary histories of privilege, power, and domination therefore must be confronted and challenged in our practices. It is only then can we resist the urge to name and categorize people as resilient and reify that which harms us all.

Our method, thankfully, also gives us the answer. Doing ethnography is such a privilege, and we must leave room for joy and compassion. Ethnography drains us, but it also sustains us. The beauty we find in connections and encounters remind us that people matter, and that connections despite difference can happen. The quiet and rigor of analysis allow us to revel in and be in awe of the texture and creativity of human life even when it exists within the banal moments of the everyday. The act of translation and dissemination allows us to share what we have learned and, hopefully, speak truth to power. An ethnography based in vulnerability and an ethics of caring and reciprocity gives us as practitioners, not a way out, but a way through, and a way in.

Shift two: An embodied and participatory social science

Our instrument is what makes ethnography truly distinctive and beautiful. As Chicano poet-anthropologist, Renato Rosaldo (1994), detailed, (and which has mistakenly been attributed to Geertz in the referential practice of canon-building), our method requires "deep hanging out." This involves the very subjective and singular act of immersing oneself in a space, cultural group, or social field and capturing poignant insights from actual people about their lives. An ethnographer makes a living on being present and capturing the texture of human life. "The data which ethnographers use is a product of their participation in the field rather than a mere reflection of the phenomenological studies, and/or is constructed in and through the process and analysis and the writing of ethnographic accounts" (Hammersley 1992, 2). While in "the field," one immerses themselves, captures data through experience in the form of "fieldnotes," sits with these "assets" and ephemera of encounter as the act of analysis, and then shares that information with others. We call all practitioners to extend their definition of the field. Even when things fail; a respondent is quiet, or doesn't match the screener, or wants to derail the conversation, these are all learning lessons – roll with it. When clients question your methods, or the value of your small sample, listen, they're telling you something. Our bodies are our analytic instrument, we must honor the rigorous and grounded foundation of our training and method that lives within showing up in our human-self and committing to ethnographic encounters.

Shift three: A grounded approach to confront the status quo

The goal of reflective practice is "to avoid creating new orthodoxies that are exclusionary and reifying" (Grewal and Kaplan 1994, 18). The ethnographer shares what they have learned, through their own lens, to expose assumptions for falsehoods, and orthodoxies. We bring hard truths to the table. We share human information as evidence to reveal the assumptions our clients hold. Our method can fuck you up, it can expose your own biases and assumptions and require new frameworks for understanding (e.g. Mahmoud 2004). The ethnographer must question the status quo to understand what lies beneath. This can only happen when we "work together, revel in difference, fight exploitation, decode ideology, and invest in resistance" (Halberstam 2011, 21). This also means casting the critical lens to the self. Be honest about the limitations of our methods, and the capabilities of the human body as an instrument., but know our value and push back on timelines that seek to domesticate our methods and work us in ways that limit our time for engagement and analysis.

Ethnographers, by practice are "never fully outside or inside the community" (e.g. Naples 2003, Behar 1997). Ethnographers, even when we are conducting auto-ethnography, or engaging with communities we see as our own, are always living "in between." Our position as an analytic observer pulls us out of the moment. This gives us keen powers of perception. Because we are *betwixt and between,* we must be aware of positionality and power. Our own subject position shapes what we know, what we have access to, and how both research subjects, and our stakeholders perceive us and the legibility and validity of our findings (Naples 2003).

Without critical reflection, our method of "deep hanging out" can become voyeuristic, invasive, and extractive. Yet, when we draw from feminist methodologists, we can shift the power, and expand our possibilities. Instead of mastery, we can be humble. Instead of being extractive, we can be collaborative. A feminist practice examines the relations of power in what we ask, how we ask it, why we're there, and what are the expectations of exchange. We must seek and create a form of cooperation in our methods that is not dependent on remunerative alliance, but on our shared position of precarity within the extractive systems of contemporary capitalism. Because we are all exposed and vulnerable. We too are failures, we too require softness, we too need systems to support us, we too are struggling.

Being betwixt and between is powerful because this is the space of translation, transformation, and as we believe, our superpower in imagining new worlds and possibilities. It is here where we can use reflexivity and compassion to imagine past resiliency to collective acts and systemic transformations. We need to do more than live – we need to collectively thrive.

Shift four: A rigorous method of affect, compassion and vulnerability

As ethnographers, we act as human griots—storytellers and world builders. We write and share about "what most links us with life, the sensations of the body, the images seen by the eye, the expansion of the psyche in tranquility: moments of high intensity, its movement, sounds, thoughts" (Sandoval 2002 21). Ours is an instrument of affect. We *feel* the challenges we hear, we carry those burdens, and work to communicate its significance. Ethnography is an instrument, as feminist methodologists explain, honed through praxis. If we use our method to extend compassion, we can break down power differentials and experiential differences. Instead of a practice of distance and clinically cold extraction, we can build relationships if we bring an ethic of caring. We believe we need to bring ourselves fully, as an offering to extend compassion and model vulnerability. This method of encounter, of witness, assessment and ultimately communication requires and demands trust and a sense of communion.

For us, this must go in three directions; first and always; those who give us their time and let us enter their worlds: our research participants and collaborators. That's a big ask, and we must respect the immense privilege of being able to walk into someone else's life and be "in charge" of translating that to others, mostly in positions of power. The second direction is to ourselves. We need to be kind to our community of practitioners and stand together to resist the automation of our practices, the shortening of timelines, and the dismissal of our value. The third is our stakeholders and business collaborators. They deserve our "best practices" to understand the ethics of their actions.

THE CONCLUDING JOURNEY

We are on a quest for new forms of community, recognition, and ways of being that do not demand resiliency. Resiliency isn't liberating, nor does it give us strength; it's exhausting and time consuming. While some resiliency can also be resistance, it almost never leads to liberation, because resiliency already inherently connotes subjugation. Resiliency rarely makes space for resistance without consequences and transformation without mass deliverance because it's too wedded to the systems that bind, grind, and spit us all out. So, what is the alternative?

We look to our method for advice, ethnographic practitioners for support, and the communities we build across differences to reveal new ways of being in the world and in relation with each other. Our value is that we can build and stand outside conventional ways of understanding success and failure in our broken system. Our methodology of encounter, connection, and experience can show us the way. This manifesto is our attempt to build community and foster bridges between ourselves, our research subjects, our stakeholders and collaborators, and our financial backers. "We must risk being open to personal, political and spiritual intimacy, to risk being wounded" (Anzaldúa, 2002, 8). We know this is hard, we know this is more personal. But the moment demands this of us. It's time to be wounded together.

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NOTES

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Beyond Representation

Using Infrastructure Studies to Reframe Ethnographic Agendas and Outcomes

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The ethos and methods of participatory research have been widely embraced as a powerful approach to address systemic inequity in the design of technology. While there have been many gains and developments that merit celebration, an unspoken, prevalent assumption is that inclusive forms of engagement will unequivocally result in a more inclusive product. Using the case study of an ethnographic project, this paper critically examines how the task of producing "better" (more ethical, more participatory, more statistically diverse) representations, had the unintended consequence of displacing structural outcomes to questions of aesthetics and statistical sampling. An investigation into the cause of this displacement reveals the resilience of deeper historical biases that persist from the early years of electronic computing. As a possible remedial framework, this paper introduces the field of infrastructure studies, which makes an explicit connection between the material, historical and semiotic dimensions of contextual investigations, thereby broadening the scope of ethnography from developing insights to driving systematic change. Put simply, this paper argues that to truly develop inclusive products we must find ways to expand the concerns of ethnography beyond questions of representation to strategies that can help decolonize the sites and processes of techno-production.

INTRODUCTION

The start of this narrative fits a familiar trope—after completing a bi-continental, ethnographic study with around 30 participants, our research team was working on synthesizing its findings into insights and user-centered frameworks, one of which was a set of personas. Except that in this case, the analysis phase of the project roughly coincided with a groundswell of protests after the unnecessary and violent death of George Floyd at the hands of the police. The gut-wrenching details of the fatal encounter captured on video by bystanders was a tipping point that catalyzed widespread activism and a pronounced demand for accountability and racial justice. Mass public mobilization had a far-reaching effect—US corporations across multiple sectors, including tech, made public pledges to take a more active role in the fight for racial justice. Inspired by these events and a newfound institutional commitment to equity, our stakeholders initiated several discussions about how the team might better incorporate the needs and perspectives of underrepresented user groups within our product development cycle. As one outcome from these conversations, the research group was tasked with developing more diverse representations of gender and race in the persona set that was currently under development. The underlying thought was that the set could serve as an epistemic center to shape the development cycle and serve as the basis of a more inclusive product strategy. While the support and trust of leadership was appreciated, the directive contained hidden complexities that were both an opportunity and a quandary.

Although the ethnographic study had encompassed a broad swathe of participants from diverse backgrounds, the idea of centering individual personas on a specific racial and gender identity was problematic. On the one hand, as fictionalized, grounded representations meant to build empathy, personas have the potential to serve as provocations that might play a part in rectifying a long-standing lacuna and pervasive biases. On the other hand, personas are fragile evidentiary forms that are woefully flimsy in their capacity to bear the full burden of historical and cultural difference. The team had used participatory modes of design and exploration as a strategy to counterbalance the interests that accompany our position as investigators of cultural and social phenomenon. But by explicitly underscoring dimensions of diversity for each of the personas, we would effectively be adding a much heftier weight of "truthiness" and indexicality typically associated with documentary film.

The comparison with documentary practice here is intentional. Non-fictional filmmaking has long since grappled with the crisis of representation, simultaneously questioning and mobilizing the capacity of mediation to re-imagine forms of subjectivity, expose asymmetries of power and reformulate agency. In fact, there is much to be learned from how documentary production has made inclusivity a question of not just casting (and aesthetics/film form) but the production crew, i.e., people on both sides of the camera. Unfortunately, we were well past the point of the film shoot, i.e., the ethnographic encounter, with looming deadlines and an opportunity to make a substantial impact on the product design process. While there was no possibility of a "do-over," as Bill Nichols' (2010) seminal work on documentary practice reminds us, the narrativization of facts is always a matter of interpretive reflexivity:

> The division of documentary from fiction, like the division of historiography from fiction, rests on the degree to which the story fundamentally corresponds to actual situations, events, and people versus the degree to which it is primarily a product of the filmmaker's invention. There is always some of each. *The story a documentary tells stems from the historical world but it is still told from the filmmaker's perspective and in the filmmaker's voice* (p. 12, our italics).

After much discussion and debate, a two-pronged working strategy emerged regarding the production and subsequent evangelization and use of the diverse persona set. Firstly, we conceptualized the personas as the start of a decentering process to defamiliarize the team's assumptions about the prototypical user that would ultimately lead into a longitudinal phase of engagement with specific cohorts. I conducted dozens of workshops with multiple teams over the course of a few months in a concerted effort to propagate our ethos of designing for and with the margins. Secondly, as a complementary action, we also proposed an ambitious set of recruiting quotas to ensure the adequate representation of specific groups in subsequent ethnographies, lab-based evaluations and quantitative research. An aggregation of metrics regarding participant diversity across studies would be rolled up into a Key Performance Index (KPI) and reviewed on a quarterly basis by functional leads and the program's General Manager. The first few months of evangelizing and getting teams to incorporate the personas into their thinking was a period of intense work where progress was incremental but satisfying. The workshops gave us a palpable sense of impact in terms of a cultural shift even as we fell short of our recruiting goals. Over the course of the next year our recruiters worked hard on setting up new databases and community partnerships that helped our KPIs trend green. But by this point, several unintended consequences from our endeavor became apparent.

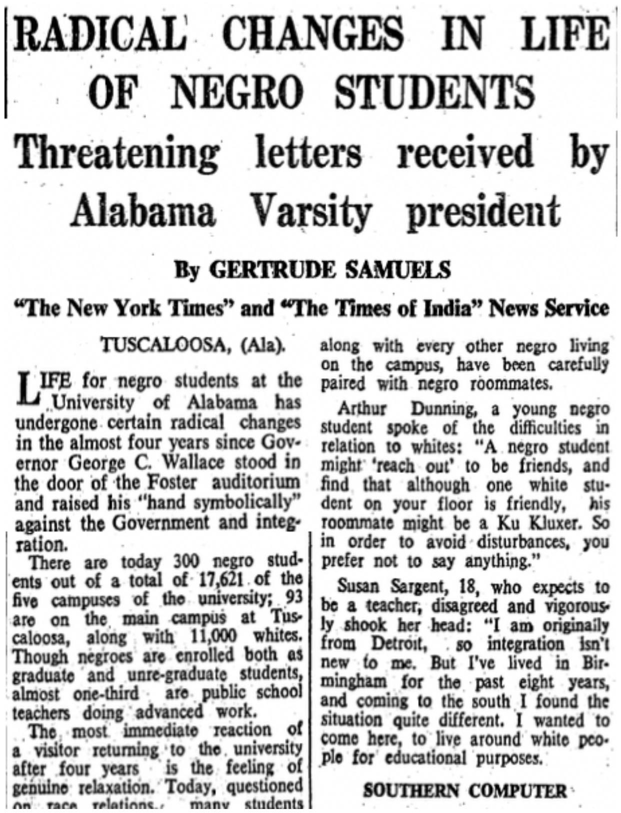
To our dismay, we realized that the burden of responsibility for product inclusivity was being fulfilled by a tautological system of signifiers. Much like how the narrative form of documentary films suggests a kind of closure (Godmilow, 1997), the presence of "diversity" within the persona set had turned into self-sufficient evidence of inclusivity. There was an innate belief that the product was inclusive because the teams were referencing a set of personas that represented diversity. Similarly, the diversity of the research participant pool expressed as a KPI metric became a proxy for the overall inclusivity of the product. Our emphasis on producing "better" (more ethical, more participatory, more holistic, more statistically significant) representations had displaced the locus of responsibility and accountability from product change to questions of aesthetics, sampling and methodology.

Which is not to say that initiative lacked sincerity, the genuine backing and participation of our stakeholders or broader institutional support. Our leadership devoted a significant amount of time and resources to the process, from steering cross-functional working groups, to supporting several forums and bottom-up initiatives. But, speaking personally, it felt like the empiricism of tracking KPIs had begun to dominate the conversation, muting and at times even overshadowing the achievement of structural outcomes. And after a year or so, it was unclear as to what specific progress had been made to affect the actual product and design process. So what exactly went awry?

In this personal, auto-ethnographic account, I will critically interrogate this recursive loop that, at least anecdotally, has been experienced by colleagues involved with similar initiatives across a number of organizations. In the first section, I will historicise the problem of inclusion that our team was seeking to redress. The theme of resilience is significant here because it describes not requirements of our ethnographic praxis or institutional response, but the persistence of historical biases and inequities that are continuously reinscribed into newer technological frameworks. This resilience of bias will serve as a prompt to think and act outside of the scope of what traditionally might be considered ethnographic practice. As a conceptual framework for this expansion, I will introduce infrastructure studies to help us connect the material, historical and semiotic entanglements of ethnographic investigations that broadens the agenda of our praxis. The idea of retrofitting infrastructure and Pierre Bourdieu's concept of "symbolic capital" will help diagnose the tendency to shift from the production of "knowledge units" to "accounting units." In the final section of this paper, I will outline some things we could have done differently from developing better metrics to building platform cooperatives. Admittedly, this is not a how-to guide, but rather an argument without guarantees, inconclusive and yet hopeful in terms of prescribing a path forward. It drives ethnography towards a purpose that encompasses and exceeds the regime of KPIs and tracking and knowledge production—of producing coordinated institutional action and measures of mutual accountability.

LEARNING FROM HISTORY

An article that appeared in *The New York Times* and *The Times of India* (India's largest English Language newspaper) in 1967 (see figure 1), titled "Radical Changes in Life of Negro Students," focuses on the 300 or so African American students attending the recently integrated University of Alabama. Recounting the broader resistance and generally hostile sentiment of the non-black student community towards integration, the article briefly mentions the "Southern Computer"—an IBM machine used by the college administration to ensure that students were paired with "compatible" roommates, i.e., individuals that belong to the same race. Given the racial history of Alabama and the rampant presence of the Ku Klux Klan in the local community, it is not particularly surprising to learn that the university's administration would use the computer system to reinforce segregation under the guide of "compatibility."



RADICAL CHANGES IN LIFE OF NEGRO STUDENTS

Threatening letters received by Alabama Varsity president

By GERTRUDE SAMUELS

"The New York Times" and "The Times of India" News Service

TUSCALOOSA, (Ala).

LIFE for negro students at the University of Alabama has undergone certain radical changes in the almost four years since Governor George C. Wallace stood in the door of the Foster auditorium and raised his "hand symbolically" against the Government and integration.

There are today 300 negro students out of a total of 17,621 of the five campuses of the university; 93 are on the main campus at Tuscaloosa, along with 11,000 whites. Though negroes are enrolled both as graduate and unre-graduate students, almost one-third are public school teachers doing advanced work.

The most immediate reaction of a visitor returning to the university after four years is the feeling of genuine relaxation. Today, questioned on race relations, many students along with every other negro living on the campus, have been carefully paired with negro roommates.

Arthur Dunning, a young negro student spoke of the difficulties in relation to whites: "A negro student might 'reach out' to be friends, and find that although one white student on your floor is friendly, his roommate might be a Ku Kluxer. So in order to avoid disturbances, you prefer not to say anything."

Susan Sargent, 18, who expects to be a teacher, disagreed and vigorously shook her head: "I am originally from Detroit, so integration isn't new to me. But I've lived in Birmingham for the past eight years, and coming to the south I found the situation quite different. I wanted to come here, to live around white people for educational purposes.

SOUTHERN COMPUTER

Figure 1. Article in The New York Times and The Times of India (1967) describing the use of the Southern Computer at the University of Alabama

Flash forward three decades or so to the website Roommates.com founded in 2000 as a service that provides a way for users to find roommates to save money or add some extra income. To use the site, users had to create a profile by answering a series of questions including their name, demographics and the type of roommate they were looking for in terms of these last three questions. The site would then use a matching algorithm to help users find the "perfect match" in a neighborhood or area of their choosing. In 2008, the Fair Housing Council of San Fernando Valley filed and won a case against Roommates.com for violating the California Fair Housing Act Section 12955 by allowing users the ability to discriminate through the website's onboarding questionnaires.

A startling realization from this historical juxtaposition is the resilience of bias and discrimination and its ability to reinvent itself and evovle. The problem we are up against is one of pervasive, structural asymmetries of power that Virginia Eubank (2018) identifies in automated systems in her study on Medicaid and Temporary Assistance for Needy Families (TANF) in Indiana, a computerized homelessness entry system in Los Angeles and a child welfare program in Pennsylvania. Applying a historical lens to her analysis of the systems, Eubank (2018) connects the automation used in the processing of applications to the criteria formalized in the 19thcentury poorhouses and Christian eugenics movement. Documenting the real harm and impact of automated decision making on vulnerable classes, Eubank (2018) concludes:

> Automated eligibility systems and predictive analytics are best understood as political decision-making machines. They do not remove bias, they launder it, performing a high-tech sleight of hand that encourages us to perceive deeply political decisions as natural and inevitable. They reinforce some values: efficiency, cost savings, adherence to the rules. They obscure or displace others: self-determination, dignity, autonomy, mutual obligation, trust, due process, equity (p. 224).

If an attention to history alerts us to the persistence and resilience of discrimination, it also surfaces important lessons on the consequences of letting these biases go unchecked. Surveying a 30-year period between 1943 and 1974, Mar Hicks (2017) offers a cautionary tale on the demise of British computing because of the low value associated with the tasks performed by women workers in the British computing industry. As highlighted by David Alan Grier (2013) in his history of the central, but neglected role that women have played in computation, the first computers were in fact humans, and mostly women, who performed complex calculations by hand. The dominance of women as electronic computer workers during Britain's war time efforts was due to the denigration of early computer work, which was referred to as the "industrialization of the office" (Hicks, 2021, p. 139). The post-war period witnessed a continued reliance and interdependence on women as computer programmers in the workplace. However, this was concentrated in lower-level clerical grades and lower pay as an outcome of a gendered-class based system where men were promoted to managerial positions. The 1960s heralded a change in the perception of computers as important tools for consolidating and wielding power over workflow, which, in turn, brought a change to the value associated with computer work. This required a burdensome transfer of knowledge from women computer workers who possessed the required skills to perform the jobs, but were not allowed to apply to the newly created class of management-aligned computer jobs:

> In 1959, one woman programmer spent the year training two new hires with no computer experience for a critical long-term set of computing projects in the government's main computer center while simultaneously doing all of the programming, operating, and testing work as usual. At the year's end, her new trainees were elevated to management roles while she was demoted into an assistantship below them, despite her longer experience and greater technical skills (Hicks, 2021, pp. 140-141).

The continued feminization of computer work in Britain caused an unprecedented labor shortage, with young men supposed to take over the job leaving for managerial positions because of the associated stigma. By the time that the UK government decided to invest in computer infrastructure and develop technologically advanced mainframes as a potential solution to its artificially induced labor shortage, decentralized systems were becoming the norm. In Hicks' (2017) parlance, the demise of the computer industry in Britain was a result of sexism by design "as a feature, not a bug."

The lesson here is simple, but far reaching. As ethnographers tasked with the project of equity and inclusion, it is imperative that we locate our ethnographic material within broader historical developments. An explicit acknowledgement of these histories reveals not only the resilience of bias and unexpected ways in which discrimination apparates itself, but the importance of deeper, structural action. The questions of representation and inclusive research practice that we grapple with are necessary but inadequate to resolve structural issues. We need to expand the scope of our work from the production of insights to rewiring the circuits of decision making that transform how things are done. As a path forward, I propose the notion of "infrastructural thinking" to help us locate our interventions as ethnographers and researchers historically, while provoking us to explore deeper, structural alliances and outcomes that exceed disciplinary concerns.

THINKING INFRASTRUCTURE, INFRASTRUCTURAL THINKING

Infrastructure studies, which emerged from science and technology studies and information studies, originally sought to analyze a range of large-scale systems such as electric power grids (Hughes, 1983) that one might typically consider built infrastructure. Emphasizing the need to account for different measures of scale within the material organization of systems and networks, the concept of infrastructure has been applied to an analysis of assemblages spanning labor, material practices, and organizational structures (Ribes & Bowker, 2009), as well as intangible organizational schemas that shape knowledge such as classification systems (Star & Ruhleder, 1996). In postcolonial contexts, such as South Asia, there have been several recent engagements with infrastructure studies as a means to recuperate marginalized histories from dispersed socio-technical networks such as water distribution systems (Anand, 2017) or state-sponsored projects such as nuclear reactors (Mukherjee, 2020). In many of these studies, infrastructure reveals itself most clearly at the moment when it breaks down (Starosielski and Parks, 2017) even as it serves as "the living mediation of what organizes life: the lifeworld of structure" (Bertland, 2016; p. 393).

But what exactly is infrastructure? The varied subjects of these conceptualizations seem to have tested the elasticity of the term, creating a productive, yet vague understanding of infrastructure as a critical category. This confusion extends well beyond esoteric academic interests—at the time of writing this article, the definition of infrastructure had been the subject of vigorous debate in the United States congress and was at the center of a 3.5-trillion dollar spending proposal that sought to fund childcare, education, and a number of important programs towards strengthening the country's "social infrastructure." Providing some clarity on the matter, anthropologist Brian Larkin (2013) offers a sensible, two-part definition of infrastructure as, on the one hand, "built networks that facilitate the flow of goods, people, or ideas and allow for their exchange over space" (p. 328) and, on the other hand, as "forms separate from their purely technical functioning… [that] need to be analyzed as concrete semiotic and aesthetic vehicles oriented to addressees" (p. 329). Definitions aside, what does infrastructure studies do for ethnographic research?

Even as ethnography is vital to the task of studying infrastructure, we have forgotten that we ourselves are imbricated within techno-social infrastructures responsible for conceptualizing, developing and maintaining a vast array of products and services. As ethnographers, our responsibility is typically centered on the ethics of the research encounter as we strive to build empathy and sensitize stakeholders and teams to the latent needs of our subjects. We wholeheartedly strive to perfect the semiotics of representation, forgetting that the forms we produce are not an end in themselves. There is a clear parallel here between acts of representation and Lucy Suchman's (1994) critique of speech acts as social/political action:

> The observation that language is social action is due originally to Austin (1962) and the later Wittgenstein (1958), who argue for the impossibility of theorizing language apart from its use. Somewhat paradoxically, however, their observations have been taken by subsequent theorists as grounds for assuming that a theory of language constitutes a theory of action. Rather than setting up as a requirement on theorizing about language/action that it be based in investigations of talk as a form of activity, the observation that language is action has been taken to imply that action is, or can be theorized as, the use of language qua system to get things done. And language

> taken as a system provides a tractable core phenomenon for disciplines whose theory and methods best equip them for formal systems analysis (p. 87).

Infrastructural thinking prompts us to find ways to decolonize not just the research encounter and modes of representation, but also the processes and sites of product-design and techno-production that follow. Our involvement as ethnographers, does not end with the production of knowledge, but rather must extend through the product life cycle. Reconceptualized through this lens, the project personas can be seen to be an attempt to retrofit the institutional infrastructure of product design, except that their brittleness and scale made them hard to alter. Here, we arrive at a paradox. On one hand, the personas and efforts for better representation in the research practice received broader institutional support. On the other, much like our efforts which had inadvertently become ensnared within a recursive loop of representation.

Sociologist Pierre Bourdieu's concept of "symbolic capital" helps us understand the dissonance. Symbolic capital describes activities that do not entail any economic benefit or monetary exchange but instead accrue reputation in forms such as credit, prestige or authority. As David Swartz (1997) notes, any form of activity or even capital—economic, cultural, social—may acquire a symbolic form if it:

> gain(s) in symbolic power, or legitimacy, to the extent that they become separated from underlying material interests […] Individuals and groups who are able to benefit from the transformation of self-interest into disinterest obtain what Bourdieu calls a symbolic capital. (p. 43)

Note that the terms *self-interest* and *disinterest* have a technical meaning in economic theory. Activities which are oriented toward the maximization of economic benefit are considered *self-interested*; while the forms of exchange that are noneconomic are termed *disinterested*. For Bourdieu (1987), the theory of economic production (self-interest*)* and a general science of the economy of practices (disinterest) co-constitute each other: "the world of bourgeois man, with his double-entry accounting, cannot be invented without producing the pure, perfect universe of the artist and the intellectual and the gratuitous activities of art-for-art's sake and pure theory" (p. 16). A shortcoming of classical economic theory then, is that it is blind to the *disinterested* foundations of the very order it claims to analyze, ignoring the processes by which symbolic capital is linked to power through processes of legitimation.

The manner in which the project personas accrued symbolic capital should be somewhat apparent, but worth sketching out as a process. As emergent forms associated with public protests for social and racial justice, the personas were legitimized by our institution's commitment to inclusivity. They represented an ideal, aspirational state that encouraged voluntary, social accountability. Incorporating the personas into product decision making afforded the prospect of favorable stakeholder reviews and improved odds for feature launches. Unfortunately, the actual task of thinking about inclusivity via the personas was diluted and absorbed into a form of performative metrics.

Gingras' (2020) traces a similar turn in the domain of scientific publishing where a shift in the technical infrastructure of journal publishing to online publishing resulted in the concentration and subsequent super-specialization of scientific journals at the hands of a few giant publishing firms. Scientist authors, journal editors and managers of academic institutions began to game the system of bibliometrics in an effort to increase the number of citations, improve the Journal Impact Factor, essentially any form of objective measure of the value of a paper or publication. The value represented by these metrics in turn directly influenced funding and grants needed for subsequent research. The inadvertent consequence of this process transformed the published paper into an "accounting unit" used to "*evaluate* *researchers* and research organizations (departments, laboratories, and universities)" (Gingras, 2020; p. 67, my italics). To return to my case study, essentially, the output of the research program had been transformed from a "*knowledge unit* to an *accounting unit*" (Gingras, 2020; p. 64, my italics). The transformation effectively emptied ethnographic insights of their content. So what should we have done differently?

RETHINKING ACTION

In *Complaint!* (2021), feminist theorist Sara Ahmed investigates how matters of discrimination are handled by universities, documenting the experiences of dozens of individuals who either filed formal grievances through institutional channels or who challenged the system meant to provide redress. As Ahmed (2021) notes, those who "challenge how power works come to know how power works" (p. 47). The complaint becomes a form of "sticky data" that begins to define and describe the person who is complaining. This counterintuitive reversal sums up the predicament of the research team where recruiting quotas meant to compliment the personas became a measure of the program's efficacy. Perhaps we had strayed too far from the core strengths of ethnographic practice? After all, ethnography is an inductive method that produces forms of anthropological knowledge that are expressive and provide thick descriptions of contexts, actions and motivations. But to dismiss quantitative forms of knowing entirely would be an irresponsible (mis)diagnosis, unlikely to resolve the structural tension that emerged from the project. Measuring the diversity of a participant pool is a critical step to pluralise the breadth and range of experiences that inform an understanding of the world. It provides a measure of accountability at a minimum threshold of action for any product or service aspiring to a greater degree of inclusivity.

Our impulse to combine semiotic and quantitative representation was a good move. What we failed to do was approach metrics from an infrastructural perspective. Instead we worked in silos and did not account for dependencies between initiatives, which would entail assessing progress across initiatives. For example, instead of looking at the diversity of the participant pool in isolation, we should have been aligning our goals with a sister effort led by Human Resources that was investing in increasing the diversity of the product team making decisions. Conversations about developing more inclusive research approaches and methods should have been conducted in parallel with developing more inclusive processes to execute on insights with the product and design team. The task of measuring product satisfaction of specific cohorts should have also had a product KPI to improve the baseline. We had focused on measuring task completion, instead of the holistic progress towards a desired outcome.

In retrospect, this was an almost predictable outcome. Institutional efforts focused on inclusion, such as remedial diversity training, tend to emphasize the responsibility of the individual. After all, change begins with each person building an awareness of their own biases. But as we learned from the historical overview, structural biases are trickier to resolve. They linger in the negative space between people, in the processes that constitute the inner workings of infrastructures. Eliminating these biases requires coordinated actions at scale.

Scholtz and Schneider's (2017) notion of "platform cooperativism," offers a model of collective ownership and responsibility to its participants that could serve as a resource. Conceptualized as an alternative to the extractive practices of the platform economy, platform cooperatives have formed across numerous domains such as creative practices (Stocksy is a stock photo site where contributing photographers are also owners), ridesharing (companies like Juno and Union Taxi are partially driver owned), to even bartering (Peerby is a neighbor-to-neighbor goods sharing platform). Far from a utopian project, platform cooperativism is not an idealized, unqualified state of affairs. Rather, it connotes an emerging relational model with alternative sets of values that often operate within the same constraints as capitalism (Scholtz and Schneider, 2017). If infrastructural thinking expands the scope of the ethnographic agenda, platform cooperativism helps operationalize and share the responsibility of change as a coordinated effort across functions. The path to building a platform cooperative is admittedly murky and not straightforward. It involves discussions and reflections of the inherent harms and unintended consequences of our work, especially for marginalized communities. It may result in a playbook or a checklist, so long as we acknowledge that these artifacts are the means to an outcome and not an end unto themselves. And of course, it must have measures of structural accountability that steer action towards intended outcomes.

CONCLUSION

To return to the case study, despite the initial missteps, my story has a happy ending. The team hired a dedicated researcher and product manager to focus exclusively on product inclusivity. There has been a deliberate shift across the organization to synchronize efforts in a cross-functional working group akin to a platform cooperative. But if anything, this paper alerts us to the crucial role that ethnography must continue to play in driving outcomes. Taking our cue from infrastructural thinking, the emphasis on representation can only be a part of the messy, unruly truthiness of the ethnographic encounter. We need to extend the ethics of our practice to tangible structural and product change built and maintained via networks of solidarity and care. All this, while circumventing the trap of “symbolic capital” and the knowledge that the problem of inclusion will resurface itself in new ways that will require further remediation. I offer three lessons from this case study and infrastructure studies that might serve as heuristics.

> **Think Historically.** Technological bias is historical—we cannot re-imagine and co-create futures if we remain ignorant of the ways in which it has reinvented itself within each subsequent generation of technology. A critical reading of techno-histories also provides important warnings of what could happen if these biases remain unchecked as in the failure of the British electronic industry after World War II.
>
> **Measure Holistically.** Measurement can quite easily become an end unto itself. Quantitative goals are important, but they need to focus on both individual and structural accountability. The latter can be achieved by developing horizontal measures of progress that surface the dependencies between siloed initiatives.
>
> **Act Cooperatively.** The work of change is complex and prone to friction. Infrastructures used to produce and maintain technology are brittle and resistant to change. Platform cooperativism offers a model of working together across functions to scale commitments and outcomes through collective action.

I end with a provocation from Science and Technology Studies (STS) scholar Bowker (2018), who asks: “How do we reimagine the nature of knowledge for the way the world is now? How do we put into infrastructures forms of knowledge production that can bear the weight of these new exigencies?” (p.205)

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Resisting Resilience

An Anthropologist's Paradox

NADYA POHRAN, *University of Cambridge*

Resilience can be a tremendous asset to any individual's ability to carry on despite difficulties. At the same time, revering resilience without a healthy amount of respect for emotional vulnerability—by which I mean the intentional choice to tap into our emotional beings and allow ourselves to deeply experience the emotions that arise in us doing our fieldwork and analysis phases of ethnographic research—can be a hindering block to doing good anthropological work. Drawing upon three examples from my personal work as an anthropologist—one from academic research in interreligious relations, one from a healthtech start up context, and one from doing ethnographic work in corporate settings—I call out for anthropologists to not neglect our emotional experiences. I point back to the often-referenced "empathy" within anthropological spheres and, looking at empathy as both a cognitive and an emotional phenomenon, I join the conversation of others who are arguing for the intentional inclusion of affective empathy.

Photo by Nika Kuchuk and used with permission."

Nadya Pohran is a cultural anthropologist whose research interests and areas of passion include interreligious relations, healthcare, community formation, holistic wellbeing, and LGBTQ communities. She has published two academic books and a handful of peer-reviewed articles related to anthropology of religion. She currently works as an anthropologist in business settings and loves collaborating with passionate individuals.

Social Resilience

Shifting from an Individual to a Shared Social Model for Building Resilience

JENNY RABODZEENKO, *Allstate*
KELLY COSTELLO, *Panorama Innovation*

Through Designing Your Future workshops at Cook County Jail in Chicago as part of WIND (Women Initiating New Directions) programming, we have had the chance to connect with incarcerated women awaiting trial. From these interactions with women who, despite tremendous life adversity, are extremely resilient, we have realized that the notion of resilience is a double-edged sword. While heroic, the myth of individual resilience, in the context of criminal justice, may simultaneously allow society to abdicate responsibility for those in jail.

In this PechaKucha, we propose a reframe, from individual to social resilience, which holds us all accountable. Through understanding the many types of adversity faced by at-risk women throughout their lives, especially mental health and substance abuse challenges, we show historical and current precedents for more humane solutions that enhance individual resilience via social support. The presentation concludes with a call to action: guiding principles for social resilience.

Key words: women, incarceration, mental health, moral treatment

I'm from a Community where it takes a village
Photo: Lili Kobielski
Text: CCDOC detainee

Photo: Lili Kobielski, 2018
Text: WIND program participant, 2021

Resilience. Lessons from a period of disruption

TRACI THOMAS, *Boston Consulting Group*

What happens when the research lens is turned inward? As a Strategic Designer, I spend most of time planning for research to engage with people so I can better understand their needs and behaviors and turn research insights into actionable solutions. In this PechaKucha, I share a personal reflection of what resilience means to me and the insights I gleaned based on my own experiences during the pandemic. It's a visual story about a journey of pain and loss, but also strength through discovery, experimentation, and adaptability.

"I CAN'T BREATHE"
RACISM GETS IT'S POWER FROM CAPITALISM! NO JUSTICE NO PEACE!
Police
Peace
ABOLISH POLICE
PEACE ≠ CHANGE

George Floyd protest in Nubian Square, Boston. May 2020. Photo by Traci Thomas

Traci Thomas is a Principal Strategic Designer at the Boston Consulting Group. She informs CX strategy through the design of new and improved digital products and services using a human-centric approach that's rooted in problem framing, ethnography, and iterative prototyping. She's worked with clients across several industries including fintech, healthcare, hospitality, automotive, and cultural institutions.

PAPER & PECHAKUCHA SESSION

Resilience in Acute Contexts

How can researchers and ethnographers stay resilient in times of crisis? This session will explore specific contexts of crises and catastrophes, in addition to caregiving moments where resilience is vital. Presentations approach resilience as a theoretical and ethnographically driven analytical process, illustrating in-context perceptions, survival strategies, modes of adaptation, and lessons for renewed resilience practices.

Curators: Nimmi Rangaswamy (*IIIT Hyderabad*) and Tiffany Tivasuradej (*CBRE*)

The Giving Caregivers

Resilience as a Double-Edged Sword in the Context of Healthcare

JULIANA SALDARRIAGA, *A Piece of Pie*

In this paper we challenge an assumption about caregivers of chronic patients that we've repeatedly encountered in our ethnographic fieldwork: that of the inherently and permanently resilient caregiver, or a person that, driven by feelings of affection for the chronic patient, will remain strong regardless of the challenges posed by the healthcare system or the disease itself. We describe three deeply rooted beliefs that explain why this assumption is still widespread within healthcare systems: the belief in caregiving as female calling, or the fact that women are assumed to have not just a biological advantage, but an interest in caregiving, the belief in individuality, or the fact that individuals are thought to have a preexisting and inalterable identity, and the belief in the pathological origin of mental illness, or the fact that we tend to ignore structural causes and social determinants of mental and emotional distress. We provide theoretical and practical evidence to support each belief and suggest tangible ways in which ethnographers and research teams working in healthcare can start to challenge said beliefs—and, as a result, transcend the assumption of the inherently resilient caregiver.

Caregiver resilience, feminization of caregiving, individuality vs. collectivity, social determinants of mental illness

INTRODUCTION

As ethnographers working in healthcare, we have witnessed an interesting shift: healthcare providers, pharmaceutical companies and other actors have started to move from a patient-centric to a more systemic approach, one in which the entire healthcare ecosystem acquires as much relevance as the patient. Due to this change in perspective, at A Piece of Pie we are pushing our very own relational-patient centric model, to observe the connections that exist between players and how these become a potential area of intervention (Camargo and Saldarriaga, 2021). It is by applying this model that we've had the pleasure of getting to know and working with the central subject of this paper, which is the caregiver, an actor that lives the patient's chronic illness in their own way.

It isn't radical to say the experience and the needs of caregivers must be considered. This is something that, even if not done on purpose, has still occurred spontaneously, considering caregivers sometimes accompany chronic patients during ethnographic interviews. What is different is that we argue there are assumptions about caregivers and caregiving that limit our capacity to genuinely understand and collaborate with this actor. A strong assumption, and one that we will question throughout this paper, is that of the inherently and permanently resilient caregiver, or a person that, driven by feelings of affection for the chronic patient, will remain strong regardless of the challenges posed by the healthcare system or the disease itself.

This romantic assumption of the caregiver is widespread, at least so in Latin America, where we've conducted most of our ethnographic fieldwork. There are several reasons why it is an assumption that must be critically approached to make way for more novel understandings of resilience. First, the imaginary of the inherently resilient caregiver allows budget-restrained healthcare systems to assume a passive role when it comes to supporting caregivers. It is common for healthcare providers, patient associations, among other actors to admire and praise caregivers, but such appreciations haven't been translated into concrete and permanent efforts. Second, a more genuine and holistic understanding of caregivers is essential to understand what "caregiver burnout", a concept that has become somewhat generic, actually looks like: "The vagueness derived from the various 'caregiver burden' definitions limit the term's relevance to policy-making and clinical practice." (Bastawrous 2013, 431).

In this paper, we will describe three deeply rooted beliefs that reinforce the assumption of the inherently resilient caregiver and limit the capacity of healthcare systems not just to understand, but to support caregivers in ways that respect their agency. These are: the belief in caregiving as female calling, or the fact that women are assumed to have not just a biological advantage, but an interest in caregiving, the belief in individuality, or the fact that individuals are thought to have a preexisting and inalterable identity, and the belief in the pathological origin of mental illness, or the fact that we tend to ignore structural causes and social determinants of mental and emotional distress. We provide theoretical and practical evidence to show how deeply engraved these beliefs are in Western societies, but we also suggest tangible ways in which ethnographers and research teams working in healthcare can start to challenge said beliefs—and, as a result, transcend the assumption of the inherently resilient caregiver. This so as to not draw an entirely hopeless picture of the caregiver situation and to emphasize the importance of ethnography, the social sciences, and design to critically approach widespread and taken-for-granted assumptions.

THE BELIEF IN CAREGIVING AS FEMALE CALLING

As COVID-19 began to spread in 2020, the president of Mexico Andrés Manuel López Obrador addressed the nation and suggested that the women of each household would be the primary caregivers of infected patients: "Although women want to change their role, the tradition in Mexico has always been that the daughter takes care of the father. We men are more unattached, so daughters must be responsible for fathers and mothers." (Sanabria 2020). This rather explicit affirmation perfectly illustrates our first belief, which is the belief in caregiving as female calling.

It is not a coincidence that the caregivers of chronic patients are usually the female relatives. This is what we've seen conducting fieldwork in Latin America, but the literature suggests it's what happens in other regions as well. We don't mean to say there are no male caregivers, this is starting to change and even more so in high-income countries (Lorenz-Dant 2021). Our point here is that, whenever a woman assumes the role of caregiver, it is regarded as normal and even expected, almost as if she had a biological advantage for this task. This normalization has several implications: the first is that caregiving is not regarded as work, but rather as an extension or a practical application of what we assume it is to be a woman: a loving, affectionate, and unselfish being that easily disregards their self-interest to support others (De los Santos and Carmona 2012). This happens to the point that caregiving is seen not just as possible for women, but pleasurable and fulfilling too—even in defying and challenging contexts such as Latin American healthcare systems. We have seen in our fieldwork and in the literature that caregivers of chronic patients might even say they "don't work", not because they're not investing time and energy, but because they're not receiving any compensation (Valderrama 2006). A second implication of this normalization is society and healthcare systems have, somewhat unconsciously, over-relied on these female caregivers. Caregiving is not a priority in the public agenda or in state-led initiatives, and yet maintaining the health of the population just wouldn't be possible without them (Valderrama 2006). De los Santos and Carmona (2012) make a similar point when suggesting there are three agents that are responsible for providing care to the elder population (the state, the market, and the families), but that the reality—at least so in Latin American societies—is that the family will be the only source of caregiving an elder will receive.

We've seen a third implication in the field: female caregivers feel guilty whenever they don't perform their expected role properly. When conducting social media scans, we have come across female caregivers asking for advice on how to "remain strong". Comments such as these seem more common than comments admitting a lack of resilience, and thus it is only until a crisis—a dramatic manifestation of the burden of caregiving—that caregivers will challenge or reflect upon their normalized role. We once met a caregiver who suffered from face paralysis and didn't immediately understand why this had happened to her; it was only in retrospective that she realized it was a dramatic expression of the extreme stress and pressure she permanently felt. On another occasion, a divorced caregiver once told us she "finally snapped" when her two teenage sons were reluctant to visit and take care of their father, an Alzheimer's patient, for a single day. They told her they had already made plans because "they assumed" she would take care of him, a seemingly inoffensive remark that deeply struck her and made her, from that day onwards, more aware of her own needs. It is due to testimonies such as these that we've understood it is a revolutionary act for the caregiver to challenge her expected role and to understand that acknowledging her self-interest doesn't mean she has failed.

We recognize healthcare systems and actors such as pharmaceutical companies and patient associations are aware and have even addressed the caregivers' situation in many ways. In our fieldwork, it is not uncommon to come across brochures and other printed material, as well as online and onsite events, in which caregivers are given recommendations on how to take care not just of the chronic patient, but of themselves too. However, we argue these efforts are limited for several reasons: first, whenever Latin American patient associations address the caregivers' situation, they do so sporadically and tend to concentrate only on the caregivers that look after the patients with that specific chronic illness. We've rarely seen initiatives between association to focus on common ground and cross-pathology aspects of the caregiver experience. Second, these efforts can go by unnoticed by caregivers. For example, pharmaceutical companies, and specifically their patient support programs teams, have realized that women that have been caregivers for a significant time do not need information about the chronic illness, considering they have already gained empirical know-how on how to best manage the patient. Third, and related to what we just mentioned, it's important these efforts do not patronize caregivers. A geriatrician once told us he learned something new and significant whenever he interacted with caregivers during conferences and other events—and that this disposition to learn from (rather than just instruct) caregivers was unfortunately rare among healthcare professionals (HCPs). Lorenz-Dant (2021) even suggests caregivers must be recognized as "partners" in the care of people with dementia.

This disregard for the knowledge accumulated by caregivers can be explained on a more conceptual level: Colombian anthropologist Arturo Escobar suggests Western society became pervaded by expert and scientific knowledge in the nineteenth century, to the point that other knowledges became secondary and perceived as less objective and reliable (Escobar 2018). Since women healers have historically represented a more empirical approach to healing, the displacement of knowledges has a gender dimension to it: "The suppression of women health workers and the rise to dominance of male professionals was not a "natural" process, resulting automatically from changes in medical science, nor was it the result of women's failure to take on healing work. It was an active takeover by male professionals." (Ehrenreich and English 2010, 28).

As we already mentioned, besides describing each of our deeply rooted beliefs, we will also provide practical ways from ethnographers and research teams to challenge each belief. First, whenever the sample for qualitative or quantitative research is defined, the gender of the caregiver must not be taken for granted or considered just for the sake of diversity. It must become a variable that is subject to analysis, so that research teams may observe how the belief in caregiving as female calling manifests itself and implies practical differences in the female and male caregivers' experience. For example: is society more permissive or more reprehensive of the male caregiver, in the sense he is seen as a man that is performing a female task? Second, a feminist or a gender-sensitive approach (also known as the gender lens) should be applied whenever caregivers are involved. This will enable research teams to map broader cultural dynamics and gender roles in which female caregivers are embedded. For instance, many Latin American women that become caregivers of chronic patients are already burdened with caregiving in general (of the household, of young children, etc.) and it is essential to acknowledge this. As stated by a caregiver interviewed by Valderrama: "First I took care of my children and when I turned 50, when I thought I could end my dedication towards others and take care of myself, I had to take care of my parents and now I take care of my grandchildren." (Valderrama 2006, 375). A gender lens must be adopted not just during fieldwork, but when designing questions guide and conducting analysis as well.

Third, research teams should take advantage of participatory design methods whenever interacting with caregivers. Following Ezio Manzini's "everybody designs" (Manzini 2015), respecting the agency and recognizing the know-how of female caregivers enables us to challenge reductionist conceptions of this actor. It is by applying these methods that we've realized, for example, caregivers are more interested in having moments of leisure or finding ways to make an income while taking care of the patient than in receiving what they regard as repetitive or superficial information on the patient's chronic disease. Finally, research teams should realize the benefits of the focus group for research on caregiving; an empathetic and genuine conversation between female caregivers is ideal to understand their experience is more complex than a test on their supposedly inherent resilience. In this sense, we believe patient associations and patient support programs, besides offering education on chronic illnesses, should look for ways to bring caregivers together. Providing them with this support network implies a more relational understanding of resilience, one in which resilience is not an inherent trait but a result of how supportive and enabling the caregiver's context is.

THE BELIEF IN INDIVIDUALITY

This second belief that prevents us from challenging the assumption of the inherently resilient caregiver has been widely explored in academic literature and can be summarized as follows: Western society is based on the modern idea of the autonomous and self-sufficient individual, or the individual as an atomic entity separated from its surroundings (Soares 2018). Escobar argues that "…the notion that we exist as separate individuals continues to be one of the most enduring, naturalized and deleterious fictions in Western modernity," (Escobar 2018, 83-84) and that we should look at non-Western cultures to understand there are more relational notions of personhood, such as the Buddhist idea of interbeing. It is also important to recognize the historicity of this belief: first, it was modernization and globalization that replaced communal forms of relating in Western societies (Esteva and Prakash 1998). Second, Western scholars have been able to theorize collectively, and this has enabled them to produce paradigms that determine how we understand reality; the individualism-collectivism duality is an example of this (Rautakivi et al. 2022).

Let's look at how this belief directly impacts our perception of caregivers. First, this belief suggests that, as human beings, we must be able to distance ourselves from our immediate context to understand ourselves in neutral and pure terms (Gordon 1988). Thus the skills with which caregivers perform their role, including resilience, are considered preexisting and totally independent from their situation. Second, it is due to this belief that the individual becomes the obvious basic unit of analysis, and that society is reduced to a collection of individuals. This has led research teams in healthcare to map and address "patient needs", almost as if patients existed in a void (although we recognize this is changing due to the growing awareness of the healthcare "ecosystem"), and to perceive "patient empowerment" as a phenomenon that occurs within patients—when in fact there could be an over-burdened caregiver that is sustaining this empowerment (Stajduhar et al. 2010). Third, the dominant theory of responsibility in the West is that of individual responsibility (Soares 2018); I am in charge of what happens to me, so if I don't perform my role as caregiver properly, it's because I just wasn't resilient enough—not because my context was severe and challenging. This idea of individual responsibility is implicit whenever patient associations and other actors talk about caregiver burnout and how to prevent it: they always address the caregiver, as if it were solely up to them to avoid feelings of distress. We argue caregiver burnout should always be conceived in terms of its structural causes, not in terms of a caregiver's inherent personality traits.

Finally, in a society where individuality is the norm, our understanding of collectivity is quite simplistic. We reduce collectivity to a concrete group of related or like-minded individuals (family and friends); we cannot see it as a broader and more abstract phenomenon, and this limits our capacity for collective action (Rautakivi et al. 2022). When we apply this to caregivers, patient associations in Latin America have told us they have a hard time engaging caregivers; they argue it isn't uncommon for a caregiver to attend events once or twice and to then "get lost". We believe it's because caregivers would rather look for support within their families and immediate social circle, which is how collectivity is understood in Western societies. This implies that each caregiver's experience will depend on their social capital, and we've certainly seen in the field: due to digital savviness, it is easier for younger caregivers to connect with other caregivers via social media. Another example, of course, is the fact that higher-income caregivers can afford a professional caregiver and access the HCPs of their choice.

To tackle this belief, the conversation should become less about the resilient caregiver and more about the contextual factors that enable or hinder that resilience. For this, we invite research teams to apply what American sociologist Matthew Desmond calls relational ethnography (Desmond, 2010). Desmond suggests we choose our ethnographic object carefully and encourages us to let go of categories, taking them as "curious somethings" rather than absolute truths. This way, he speaks of boundaries rather than bounded groups, and processes rather than processed people. What if our object of study is not the caregiver, but the relations and connections of this caregiver to other actors and their surroundings (Camargo and Saldarriaga 2021)? It is certainly an approach that enables us to challenge the belief in atomic individuals and atomic patients and to rethink resilience as something more contextual than an inherent and preexisting trait.

Additionally, research teams can overcome this belief by proposing collective solutions to the challenges identified in the field. Can we push those initiatives that could benefit more than one caregiver? An HCP we once interviewed thinks so. She argued healthcare providers, despite their limited budget, should contemplate how to intervene public spaces to promote inclusion of patients with physical and mental disabilities (certainly, a cross-pathology and collective approach) instead of solely focusing on providing access to pharmacological treatment. By collective solutions, we also mean solutions that involve the broader community, including actors that one would not contemplate when addressing challenges related to health. Consider how supermarkets, banks and public transportation can become quite relevant when it comes to patients with Alzheimer's and other dementias. For example, Santander Bank is interested in offering dementia-friendly banking services in the UK. Activating these kinds of support networks for patients and caregivers is precisely what will enable the caregiver's resilience.

Another way to challenge the belief in the individual is to incorporate differential frameworks to analyze and process the information obtained in the field. In 2014, Native American writer Karen Lincoln Michel revisited Maslow's well-known hierarchy of needs, in which "self-actualization" stands at the top of the need pyramid and is thus understood as the ultimate goal. Michel argues that Maslow based his pyramid on the Blackfeet Indian Nation, but that he was selective and prioritized individual needs such as self-actualization, and left out "communal actualization" and "cultural perpetuity", which can be understood as collective needs (Michel 2014). This is an example of a framework in which how we relate to others and to our surroundings is perhaps more important than how we achieve our individual potential, as if we existed in a void. Finally, another interesting framework is that of the "saturated self" (Gergel, 1991): globalization, communication technologies and current social dynamics have led individuals to take on the personas and values of the people they interact with. Applying refreshing ideas of the self-concept gives us a better understanding of caregivers and of identity in general in contemporary societies.

THE BELIEF IN THE PATHOLOGICAL (AND NOT SOCIAL) ORIGIN OF MENTAL ILLNESS

In our fieldwork, we've encountered psychiatrists and psychologists that, during their appointments with chronic patients, also try to ask caregivers how they're feeling with their role and responsibilities. This suggests certain actors are already acknowledging caregivers require emotional support, however, we argue this has occurred organically and spontaneously, as the result of HCPs' own initiative and not of state-led initiatives or public policy. The result is that feelings of stress, anxiety and depression among caregivers are being treated only when they've reached a dramatic level rather than prevented. Scholars argue caregiving has all the features of a chronic stress experience: "…it creates physical and psychological strain over extended periods of time, is accompanied by high levels of unpredictability and uncontrollability, has the capacity to create secondary stress in multiple life domains such as work and family relationships, and frequently requires high levels of vigilance." (Schulz and Sherwood 2008, 23). It is so illustrative of this experience that it has even been used as model for studying the health effects of chronic stress (Vitaliano et al. 2003). Most HCPs we've interviewed are aware of this; a geriatrician once told us caregiving should be understood as a risk factor for the development or chronic illness later in life. We argue that our third belief, which is the belief in the strictly pathological origin of mental illness, explains why other actors besides HCPs, such as healthcare providers, payers, and the pharmaceutical industry, have not taken decisive steps to address the caregivers' emotional state and its structural causes.

There is an evident connection between this belief and the belief in individuality: individualization is precisely what leads us to see mental illness as an individual, chemico-biological problem: "We blame suffering on faulty minds and brains rather than on harmful social, political and work environments". (Davies 2021, 2). In this scenario, changing from one mental or emotional state to another solely depends on the individual. This is implicit in Western self-help discourses and life-coaching techniques and became widespread during the COVID-19 pandemic (in Colombia, for example, both leaders and word-of-mouth encouraged unemployed or struggling citizens to "reinvent themselves"). English theorist and writer Mark Fischer describes this belief as “the privatization of mental illness” and suggests it has benefits for capitalism: first, it creates a demand for pharmaceuticals and leaves the structural causes of mental distress aside: “…by privatizing these problems […] any question of social systemic causation is ruled out.” (Fischer 2009, 21). Second, individuals are taught to aspire to a reductive and hedonic model of mental health, one centered around healthy habits that are aesthetical. For example, is not uncommon for patient associations and patient support programs to offer yoga and mindfulness workshops to patient and caregivers alike. Not addressing the structural causes of mental illness explains why suicide rates haven’t been significantly reduced, despite a significant investment in psychiatric and neurobiological research (Davies 2021).

We need more studies that shine light on the social determinants of mental illness—and ethnographers and social scientists working in healthcare are essential for this. We also think research teams should always include family physicians—a primary care physician that practices family medicine—in qualitative and quantitative studies. We’ve had positive experiences with this HCP in Latin America (known as *médico familiar*) and argue their background enables them to identify contextual and household dynamics that may represent a threat to caregivers’ mental health. We also need diagnostic and screening tools that properly identify social (and not just pathological) risk of mental illness in a more formal way and apply them to caregivers of chronic patients (Andermann 2018). These screening processes could be incorporated into protocols and guides to map impaired health behaviors in caregivers (skipping their own medical appoints, poor eating habits, etc.) (Schulz and Sherwood 2008). Finally, we must acknowledge “treating” these social determinants of mental health means advancing in public policy rather than individualized pharmacological treatments and therapies (Shim 2018). This suggests the kinds of actors we should work with besides healthcare providers: public officers, NGOs, etc.

CONCLUSION

Critically approaching the assumption of the inherently resilient caregiver is a challenging task, one that requires we recognize deeply rooted beliefs about caregiving, such as the ones we’ve described in this paper. To not take for granted the belief in caregiving as female calling, the belief in individuality, or the belief in the pathological origin of mental illness, we argue research teams in healthcare must be interdisciplinary; an interdisciplinary team has a higher capacity of coming across analytical frameworks that can be applied to recognize deeply rooted beliefs. For example, a team member with a background in gender studies will be more attentive to the gender roles that are at play in the experience of caregivers, or a team member with a background in psychology can be more critical of well-known frameworks, such as Maslow’s rather individualistic understanding of human needs. We also insist on the presence of ethnographers within these interdisciplinary research teams; ethnographers possess not only the theoretical knowledge and the practical tools, but also the sensibility to spot cultural, contextual, and structural dynamics that affect how people behave and relate to each other—and this is essential to rethink what resilience is in caregiving. Applying ethnography to understand and work with caregivers becomes even more urgent when we consider population aging is a demographic “megatrend”. According to the World Health Organization, the proportion of the world’s population over 60 years nearly doubled between 2015 to 2020. An increase in older people also implies an increase in caregivers, so addressing our assumptions about caregivers should happen sooner rather than later. The United Nations General Assembly even declared 2021-2030 the Decade of Healthy Ageing, something that could actually be used as platform to generate awareness about the caregiver's situation and specifically about the assumption of resilience as inherent trait.

We wish to conclude this paper with a reflection on the different types of evidence obtained healthcare research: the establishment of evidence-based medicine (EBM), which prioritizes techniques from biostatistics, engineering, and epidemiology, raises a question on the role of qualitative evidence in healthcare. Adams (2013) suggests the reliability and truthfulness of different types of evidence is codified in EBM: "In this approach to health care, the type of evidence that counts the "least", if at all, derives from what gets called "anecdotal" information […] studies that foreground the individual speaking subject as the primary source of truth have virtually no purchase, nor do those additional truths garnered from the families, communities, or relationships that help form that speech." (Adams 2013, 56). As we've shown in this paper, the deeply rooted beliefs that must be challenged to adequately work with caregivers are more easily detectable by ethnographic means. This means ethnographers working in healthcare must insist on the differential value of their approach and also encourage discussions on the importance of caregiver's anecdotes and experiences in this new era of EBM. These are thought-provoking questions for ethnographers working in healthcare.

Juliana Saldarriaga is a Colombian anthropologist with comprehensive experience in healthcare consulting and a growing interest in medical anthropology and global health. As innovation manager at A Piece of Pie, she enjoys bringing ethnographic methods, as well as anthropological and feminist frameworks, into the pharmaceutical industry and its internal and external stakeholders.

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Amplifying Resilient Communities

Identifying Resilient Community Practices to Better Inform Health System Design

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Globally, the COVID-19 pandemic has been an inflection point, bringing heightened awareness around the preparedness and resilience of public health systems in dealing with severe shocks. While the pandemic has accentuated the existing weakness in public health systems, for many, especially those belonging to marginalized sections of society, seeking healthcare has always been fraught with severe challenges and frictions.

This paper presents the findings from a two-year design research project conducted in South Africa and Bangladesh, which studied the challenges faced by health seekers, especially those whose ability to access healthcare is compromised by a range of vulnerabilities. These populations display remarkably adaptive behaviors and innovations that are aimed at mitigating the lacunae in public health systems.

In our analysis, these lacunae are articulated as points of friction, which are the gaps between the expectations of health seekers while accessing healthcare and the ability of health systems to meet these expectations. For vulnerable communities, these points of friction are often accentuated and more acutely felt. Taking a design thinking lens, we see these points of friction as opportunities for change that can potentially drive innovations in the public health space, leading to better health outcomes. The paper concludes with a set of design principles, which are meant to address the frictions identified during the course of the study and inform more user centered health systems in the future.

Keywords: Health Systems, Human Centered Design, Design Research

INTRODUCTION

Health systems can be defined as a series of processes, actors, medical expertise and resources which work together to respond to threats to human health and well-being. One of the key outcomes of a strong health system is public trust in that system to look after the interests and needs of the public. People are willing to work with such health systems to protect the health of the broader society (Kittelsen & Keating, 2019). Weak health systems, on the other hand, are mistrusted by people and therefore have a diminished possibility of helping communities flourish and at scale interventions to being accepted (Ozawa & Sripad, 2013).

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Designing for the Vulnerabilities of the Marginalized

Vulnerability is a concept that is often evoked in public health though many scholars have argued that its exact meaning is often vague. Vulnerability can loosely imply a particular *status* that may adversely impact upon well-being of individuals or groups (Wrigley & Dawson, 2016, p. 203). In our research, we chose to approach the notion of the vulnerability in an inclusive way and examples of vulnerable groups that we looked at range from large population segments such as low-income groups and religious minorities to groups with specific disease burdens such as HIV or TB. Our research confirms the notion that vulnerability is an evolving status (Alwang, Siegel & Jorgensen, 2001), that even within populations that are inherently vulnerable for a range of reasons, there is a wide spectrum of cumulative vulnerability between individuals. For example, a poor family that has recently moved into a new neighborhood may be more vulnerable to a complicated and expensive health journey than a family that has deep social roots in the neighborhood and can leverage this social infrastructure to their benefit.

A core idea that emerged from study was that of *a friction*, which can be defined as the gap between the healthcare expectations of health seekers (referred to, at times, as seekers) and the ability and intention of the health system to meet these expectations. These frictions range from the lack of accessibility options for differently abled individuals to the real and perceived indifference towards crucial care networks[1] that are likely to make a health journey successful. The frictions add layers of obstacles in accessing and receiving the care that health seekers need. We found that vulnerable populations face certain frictions that the general population may not and experience other frictions more acutely. As such, vulnerability to facing frictions while accessing care should be considered an important component of the cumulative vulnerability of an individual or a population group. Addressing these frictions or designing to mitigate them, while keeping in focus these vulnerable populations, will almost certainly address frictions faced by others who do not suffer (or at least not suffer to a degree) such vulnerabilities.

Understanding and Mapping Experiences of Health Seekers with Design Research

Globally, marginalized groups, such as the poor, religious minorities and differently abled are more vulnerable to health disruptions (Baah, Teitelman & Riegel, 2018) as well as frictions in healthcare access. Marginalization typically emerges from existing socio-economic and political realities. While design, which is an appropriate tool to address practical problems, can be leveraged to mitigate the effects of marginalization, it is incapable (without accompanying political and cultural processes) of eliminating marginalizations. One of the two core objectives[2] of Amplifying Resilient Communities (referred to as project ARC or ARC) was to use the tools of design research including video ethnography to understand the experiences of health seekers as they interacted with a number of healthcare options. Our primary focus was public healthcare but we also studied private healthcare including traditional and non-medical care, as most health-seekers we studied lived within pluralistic healthcare ecosystems. By documenting and analyzing these *health journeys*, we were able to identify and categorize a number of frictions that people experience. For seekers, these barriers can lead to a number of negative consequences such as an inability to identify the right avenue of care and engage with the treatment process. For health systems, these frictions are barriers in achieving public health goals such as identifying the right treatment plans for people, ability to reach vulnerable populations, responsiveness/resilience to shocks, among others.

COVID-19 as the Inflection Point

COVID-19 created a volatile situation for health systems and seekers. Interactions with health systems, which were already riddled with frictions for seekers, were more strained. Due to physical distancing measures, government shutdowns and other transmission reduction measures, as well as the widespread commandeering of medical facilities for COVID-19 testing and treatment, people missed essential health services such as antenatal care, vaccines, HIV testing and medication, tuberculosis care, and catastrophic health event access[3]. Alongside this, the stress put on frontline health workers and resources was unprecedented. Project ARC sought to gain a deeper understanding of how vulnerable populations[4] interact with healthcare systems (institutions, facilities, and providers) during and after COVID-19 by centering their voices, stories, and experiences. Using COVID-19 as an inflection point, we aimed to understand where the weaknesses were in health systems especially under stress.

Informing the Design of Future Health Systems Interventions

Another core objective of ARC was to frame a set of design principles that are aimed at addressing the frictions that were identified. These principles reflect the lived and felt needs of people—some of the most vulnerable users in stretched health systems. These are aimed at service and product design in health, which could be optimized to enhance maximum uptake, through a deep understanding of the seekers and the context of their lives. In ARC we could make suggestions for building back health systems, something that many stakeholders in global health imagined as an appropriate response to the failures experienced during Covid. But as discussed above, ARC, a design led inquiry was not positioned to make the changes to health systems; design principles, therefore became a way of interjecting important human-centered considerations into the conversation.

Project ARC Team

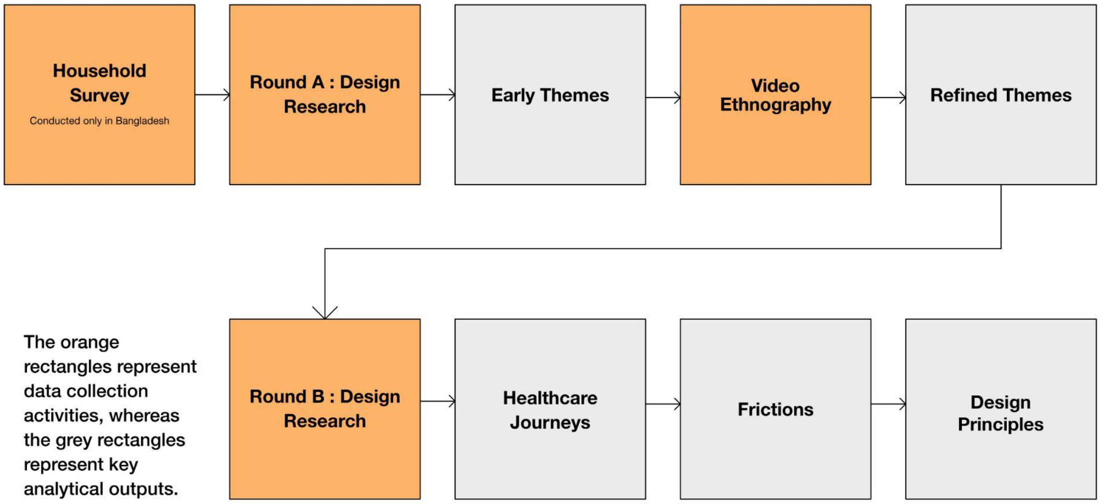
Project ARC, is an interdisciplinary consortium consisting of: Ipsos, a global insights company composed of global health experts, anthropologists, and psychologists; Matchboxology and Quicksand, long established human centered design companies based in South Africa and India respectively; independent consultant Anabel Gomez who brings an implementation perspective to solutions for key public health challenges. Quicksand worked closely with partner James P Grant School of Public health (JPGSPH) of BRAC University, who led field activities in Bangladesh. JPGSPH took the lead in recruitment and field research, while Quicksand led research design, training for the field researchers and analysis & synthesis. Project ARC was also supported by local champions networks (LCN) in both South Africa and Bangladesh. Additionally, we also consulted a global advisory group towards the latter stages of the study[5].

METHODOLOGY: DATA COLLECTION

Project ARC conducted primary research in two phases in both South Africa and Bangladesh. While each phase included design-led qualitative approaches, the first phase (Round A) intended to build a foundational understanding of health seeking practices, social relations of influence and trust within communities, the spaces that people seek care at, and the impact of COVID-19 on health seeking behaviors, perceptions, and health provision.

Round B was then designed to build upon the learnings from round A, fill gaps in our research, and most importantly, dive deeper into the life histories and care journeys of health seekers—with the aim of arriving at key friction points, and opportunities of change within health systems.

Figure 1 below presents the broad flow of the key milestones of Project ARC.


Household Survey
Conducted only in Bangladesh
Round A : Design Research
Early Themes
Video Ethnography
Refined Themes
Round B : Design Research
Healthcare Journeys
Frictions
Design Principles

The orange rectangles represent data collection activities, whereas the grey rectangles represent key analytical outputs.

Figure 1. ARC methodology outline. Flowchart © Project ARC.

Household Survey

A household survey was conducted in January 2021 with 619 individuals across 595 households in Dhaka (Korail urban slum), Bogura (rural) and Narayanganj (peri-urban). The primary objectives of the household survey were twofold. Firstly, to get a broad and early sense of the factors that respondents were concerned with when it came to health and health access and secondly to recruit the participants for the subsequent phases of research.

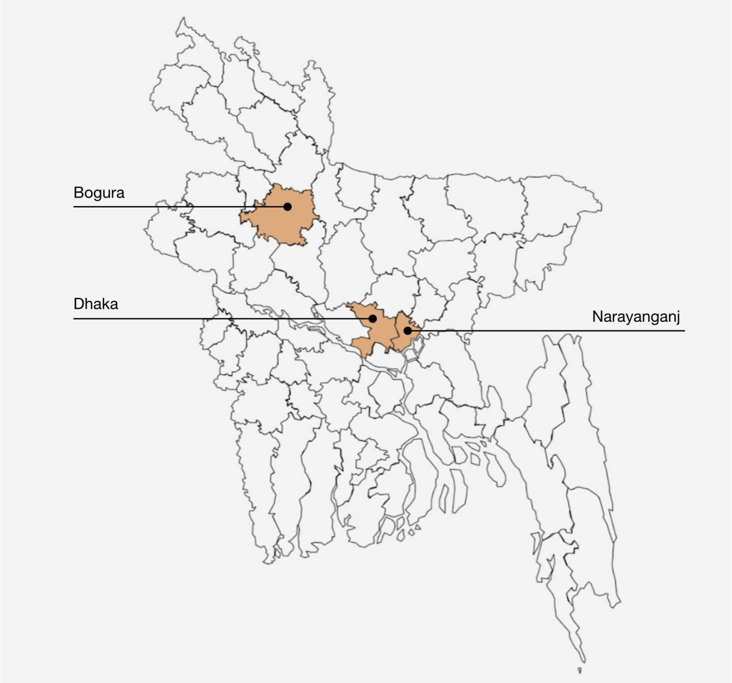


Figure 2. Research locations in Bangladesh. Illustration © Project ARC.

Round A: Design Research

Design research was conducted across South Africa and Bangladesh between February and March 2021. In South Africa we recruited respondents using an external local organization (Brand iD) and through the Center for HIV-AIDS Prevention Studies (CHAPS) clinics using purposive sampling with guidance and assistance from the Matchboxology team. Screening criteria included: 18-49 year olds living in one of the following four provinces—Gauteng, KwaZulu-Natal, Mpumalanga, and Western Cape. An even split of women and men were recruited from among: patients, providers, and community leaders (self-identified). Eligible healthcare providers (HCP) included: community health workers (CHWS), receptionists, nurses, laboratory staff, administrators, managers or physicians. 85 individual in-depth interviews were completed in total, with 69 patients or "health seekers", 28 health care workers, 30 community leaders, 42 wildcards[6], 11 non-health seekers and 5 "other" respondents.

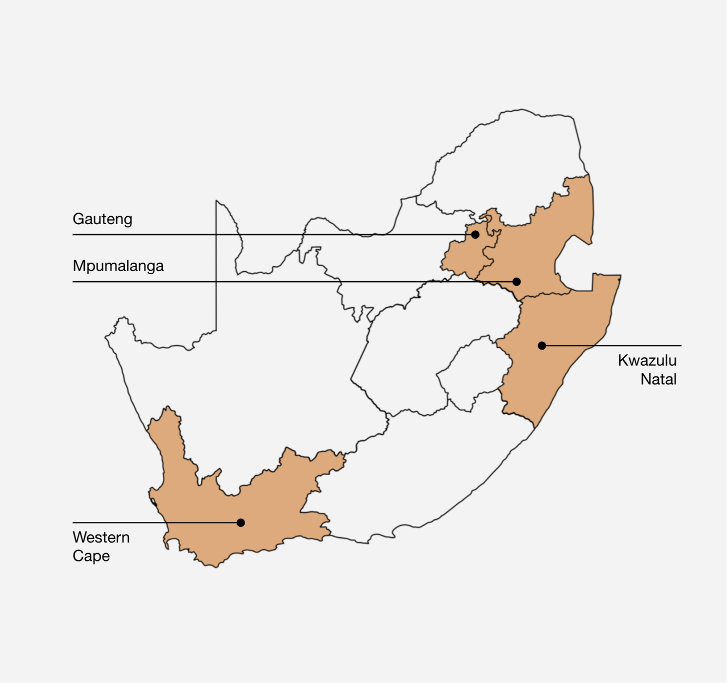


Figure 3. Research locations in South Africa. Illustration © Project ARC.

In Bangladesh, where the household survey was conducted, respondents were selected from among the survey participants. We were particularly interested in including individuals who represented disease burdens that health systems in Bangladesh have prioritized (including TB, Diabetes, Hypertension, COVID-19 etc). Furthermore, we ensured diversity in terms of gender, age, ethnicity and of-course geography. We also purposively sampled for differently abled individuals and religious minorities. A total of 156 participants participated in Round A in Bangladesh across 40 health-seeker in-depth interviews, 33 provider in-depth interviews, 6 health seeker focus groups, and 10 health provider focus groups.

Interviews and Focus group discussions were based on qualitative immersion guides that demonstrated Human Centered Design approaches. This allowed the interviewers to also explore areas of interest that arose during interviews, which were not in the original guide. During research planning, global immersion guides were first created with the overall lines of inquiry. Subsequently, localized guides were created to ensure sensitivity to local contexts (including language localization) through detailed discussions with field research partners. Additional design research probes accompanied the immersion guides to support the research inquiry. In design research, probes allow researchers to engage participants beyond answering questions and invite them to participate in collaborative discovery by mapping and reflecting on their life experiences (Mattelmäki, 2006). Figures 4.1 and 4.2 below show one of the research probes we used to collaboratively map key influencers in an individual's information ecosystem.

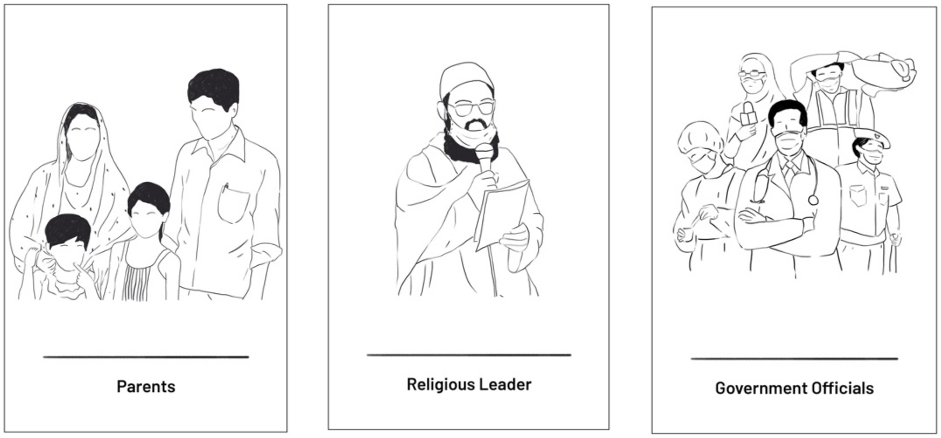

Parents
Religious Leader
Government Officials

Figure 4.1. Research Probe: illustrations of a few influencer cards—parents, religious leaders, and government officials—from Bangladesh used to dive deeper into questions of trust and access in the information space. Illustration © Project ARC.

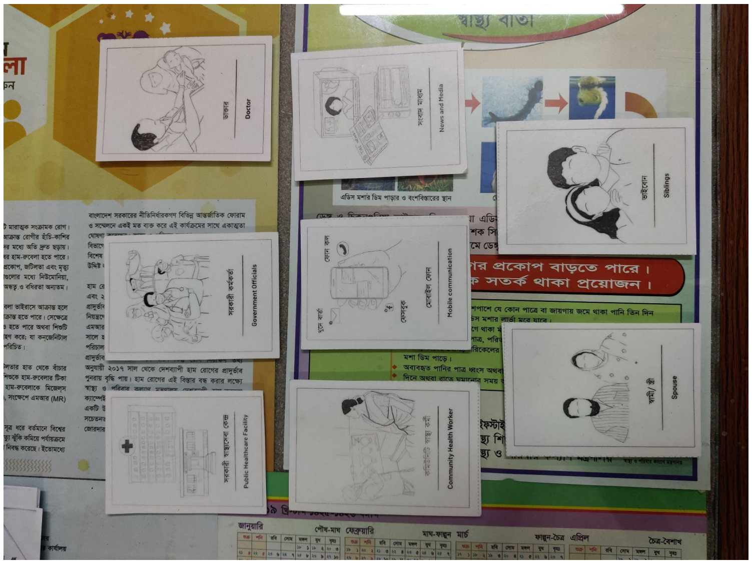

Doctor
News and Media
Siblings
Government Officials
Mobile communication
Spouse
Public Healthcare Facility
Community Health Worker

Figure 4.2. Influencer cards laid out during the research activity at a respondent's home. Photograph © Project ARC.

Since Round A was conducted as the first COVID-19 wave was still fresh in the memories of participants, a significant part of the inquiry focused on understanding healthcare experiences during the peak of the pandemic, especially during lockdowns. Apart from this, our inquiry focused on these broad areas:

1. Deepening our understanding of what "health" and "healthcare" mean for our participants.
2. Deepening our understanding of how and where participants sought care, including non-formal avenues such as traditional healing.
3. Collecting the outlines of a number of participant health seeking journeys either during the pandemic or before it.

4. Understanding the influencer ecosystem around individuals, which shapes their perception of their own health and public health initiatives and directives.

Considering that further rounds of research (including video ethnography and the second round of design research) were to follow this phase, the lines of inquiry were deliberately kept broad so as to elicit a wide range of responses, which could inform further rounds.

Video Ethnography

Filmed ethnographic research was conducted to a) lend complexity and depth to the research overall, as well as provide valuable socio-cultural context to support the design phases of Project ARC and future dissemination and b) build on the findings and emerging themes from Round A, using a participant led approach.

In South Africa, a week-long digital ethnography was conducted with 20 participants recruited from the round A in-depth interviews. The research was intended to be participant led and iterative in approach. Whilst a guide was created in response to the themes developed from Round A, participants were encouraged to take an active role in directing the research and film what was most interesting to them when it came to interactions with the healthcare system.

Out of the 20 participants in this portion of the study, five participants each were based in one of the four South African provinces. All participants were health seekers with varying health burdens, from TB to maternal and child health. Furthermore, two to three participants were also community leaders, and one was a traditional healer. None were health workers, except those who are engaged in non-allopathic health systems.

Each participant had a 1-hour long interview with their ethnographer to go over the objectives of the project, their participation and consent, training on self-filming, and to dig deeper into their interactions and existing relationships with the health system. These tasks were intended to provide an understanding of the participant's home life, cultural and social context, their networks, as well as their relationship and understanding of health, and the healthcare system. The tasks involved asking the participant to film: their daily routines, family interactions, community events of occasions, and interactions with the healthcare system and reflections on their experience of this e.g., queuing up to see a doctor or visiting a pharmacist etc.

In Bangladesh, due to constraints on travel during the pandemic, participants were recruited as 'ethnographers' of their own communities. This meant that this phase of research was in part guided by what our participants saw as most interesting and important when it came to their interactions with the health system, and their cultural context more broadly.

A total of 8 local informants led the ethnography: in Dhaka, 1 senior staff nurse from a non-governmental organization and 1 midwife; in Narayanganj, 2 students with smartphones who were respondents from Round A and 2 volunteer health workers; in Bogura, 1 respondent from Round A with a smartphone and 1 contact of a BRAC field organizer.

A local Bangladeshi ethnographer, together with the Ipsos team, was responsible for interviewing the informants, coordinating, and providing instructions as to what to film and what questions to consider and respond to. The ethnographic research began with an hour-long interview with the intention of uncovering and understanding the informant's interactions and existing relationship with the healthcare system, going over the objectives of the project, their participation and consent, and training on self-filming, as well as filming others and collecting consent.

These initial 'tasks' involved filming: daily routines, household dynamics, religious rituals and events, as well as responding to questions around notions of health and health care to ascertain how informants as well as their communities understood and defined health. After each task was sent in, the local ethnographer responded with probing questions, and a conversation between the ethnographer and the informant would lead to further learnings. After completing the first four tasks, the informant discussed potential further lines of inquiry, based on what was found during design research in Round A, with the local ethnographer and Ipsos team. The informant was allowed to lead this phase, with the intention of probing deeper into their own networks, and into themes and questions raised in the first round.

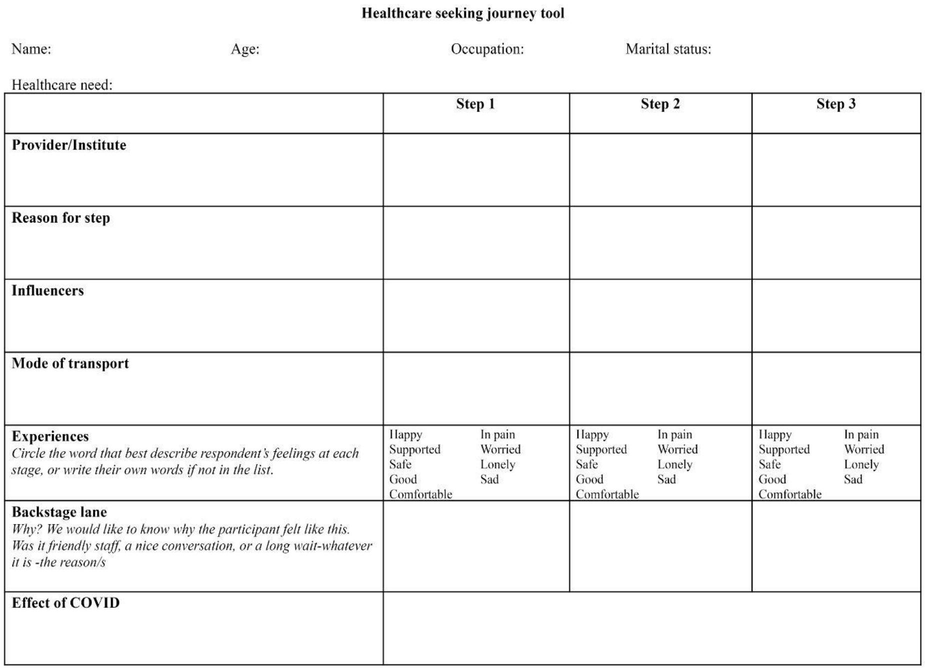
The findings from video ethnography helped shape Round B lines of inquiry, including a focus on: the role of pharmacists in the healthcare system, aspects of healthcare journeys outside of the encounter between providers and patients (considering the impact of the experience of the queue for example), and the role of family members and community influencers when it came to understandings of health and relationships to the health system.

Round B: Design Research

The second round of design research was conducted across South Africa and Bangladesh between September and October 2021. In South Africa analysis from the ethnographic inquiry showed gaps in understanding contraceptive disruptions and birth experiences, as well as a need to better understand health journeys. Therefore, this was the focus for Round B, as well as CHWs and pharmacists in their role as HCPs. Participants included: 24 women of reproductive age (WRA) selected from Round A, with whom group sessions were conducted based on contraception history and life cycle along with 7 in-depth observational studies, 3 CHWs, 3 pharmacists, 3 clinic administrators and 7 local social innovators working in health provision. The women were interviewed in groups of 3-4 in both KZN and Gauteng. Pharmacists, hospital administration and CHWs were recruited with the assistance of CHAPS. Social innovators were also interviewed in this round. Innovations were identified through gray and academic literature reviews conducted by the Matchboxology team.

In Bangladesh, analysis from the video ethnography revealed no particular gaps and the design research retained focus primarily on health seekers, with some sessions and activities with HCPs. The recruitment strategy for this phase of the research consisted of revisiting participants from Round A as well as recruiting new participants, both seekers and providers, through the networks of JPGSPH. A total of 72 participants participated in Round B in Bangladesh : 26 in-depth interviews with health seekers, 11 interviews with influencers, 13 interviews with health care providers, 6 interviews with community leaders, 13 facility observations, 8 shadowing sessions with CHWs, and 6 focus group discussions with community health workers. Interviews with social innovators were also conducted. These were identified by the JPGSPH team as well as through gray and academic literature reviews conducted by the Quicksand and JPGSPH teams.

Across both countries, Round B was intended as a more focused and detailed inquiry around early themes already identified and prioritized in Round A and ethnography. As such, a smaller number of participants were selected for this round and the interviews were significantly longer. As in Round A, our inquiry in Round B also included the use of design probes. One of the tools we used extensively was a healthcare journey mapping tool. This was a critical part of our inquiry as we wanted to capture detailed health seeking journeys in this round.



Healthcare seeking journey tool

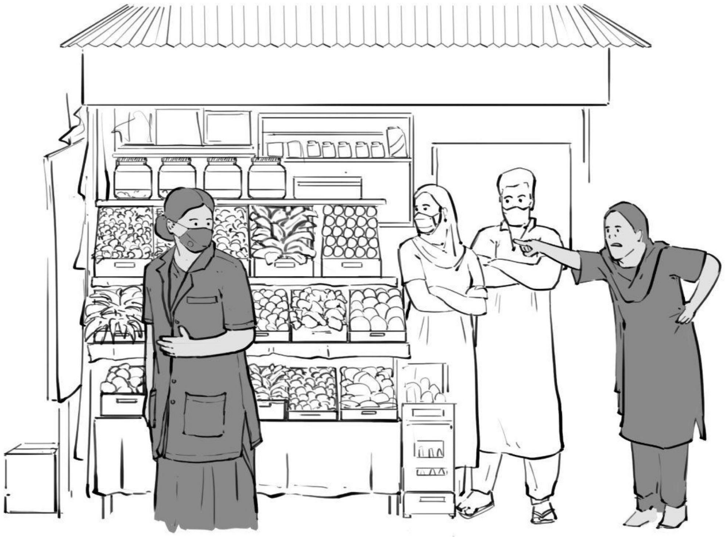
Name: Age: Occupation: Marital status:

Healthcare need:

	Step 1	Step 2	Step 3
Provider/Institute			
Reason for step			
Influencers			
Mode of transport			
Experiences *Circle the word that best describe respondent's feelings at each stage, or write their own words if not in the list.*	Happy Supported Safe Good Comfortable In pain Worried Lonely Sad	Happy Supported Safe Good Comfortable In pain Worried Lonely Sad	Happy Supported Safe Good Comfortable In pain Worried Lonely Sad
Backstage lane *Why? We would like to know why the participant felt like this. Was it friendly staff, a nice conversation, or a long wait-whatever it is -the reason/s*			
Effect of COVID			

Figure 5. A tabulated version of our journey mapping tool. Tool © Project ARC.

Another probe we used was a set of illustrated scenarios, which were inspired from the learnings in Round A. The researchers would show these to participants and ask for their observations and reflections. Scenarios helped research participants engage with complex and sensitive topics by empathizing with the character in the narrative as someone like them, rather than responding with their own experiences alone to the researcher, which could be hard for them to recall, talk about, reflect upon, and critically examine. They also helped in concretizing (Carroll, 2000) abstract concepts in people's experiences, whether they were motivations, fears, aspirations, problems etc. This led to rich discussions with the participants.



"There were often cases of people suspected of having covid were kept locked in the house and not allowed to go out, or buy food…"

Figure 6. One of the scenarios that our participants were asked to reflect upon. Illustration © Project ARC.

Apart from detailed individual interviews with seekers and healthcare providers and focused group discussions with providers, Round B also included a couple of observation techniques including **fly on the wall observation** (Gkatzidou, Giacomin & Skrypchuk, 2021), which researchers used to observe the goings on in healthcare facilities and pharmacies and **shadowing** (Hamada, 2019), which researchers used primarily to follow CHW to better understand and document elements of their care-provision within the communities they operated in.

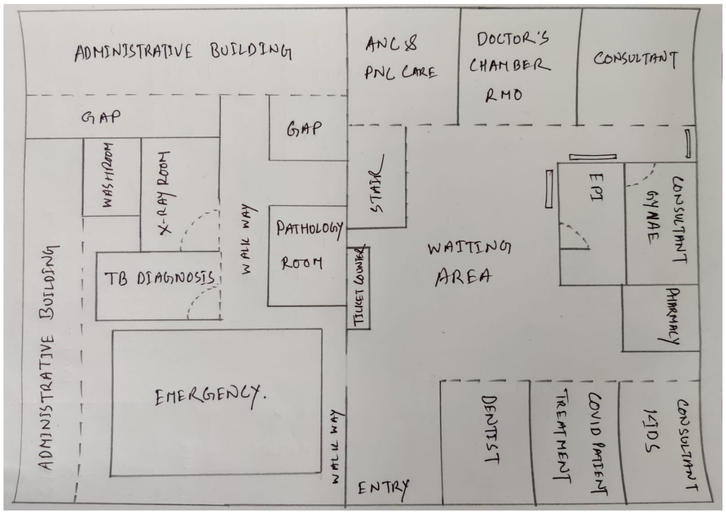

ADMINISTRATIVE BUILDING
ANC & PNC CARE
DOCTOR'S CHAMBER RMO
CONSULTANT
GAP
GAP
WASHROOM
X-RAY ROOM
WALK WAY
PATHOLOGY ROOM
STAIR
EPI
CONSULTANT GYNAE
WAITING AREA
TB DIAGNOSIS
TICKET COUNTER
PHARMACY
ADMINISTRATIVE BUILDING
EMERGENCY.
WALK WAY
ENTRY
DENTIST
TREATMENT
COVID PATIENT
KIDS
CONSULTANT

Figure 7. An observation map of a Upazila Health Complex in Bogura created by one of the researchers. Illustration © Project ARC.

Research Activities and Data Collection: Global Project ARC Research Team

Virtual workshops were conducted over Zoom in November and December 2021 to align on key themes identified in the interviews from Rounds A and B of the research in South Africa and Bangladesh. An in-person workshop was held in London in May 2022 to generate ideas based on insights and analysis from all rounds of research.

METHODOLOGY: ANALYSIS AND SYNTHESIS

The analysis was driven largely by a bottom up design thinking approach coupled with video ethnography analysis. The diagram below represents the process of building from early community observations to Design Principles, which were our final outputs. This was a highly bespoke analysis and synthesis process that was evolved by a multidisciplinary team, who were able to bring to bear best practices from a number of research and analysis traditions[7]. Ultimately it was a process rooted in design thinking, which by its nature is able to accommodate a multitude of approaches by understanding and leveraging their complementary aspects (Andrawes, Johnson & Coleman, 2021).

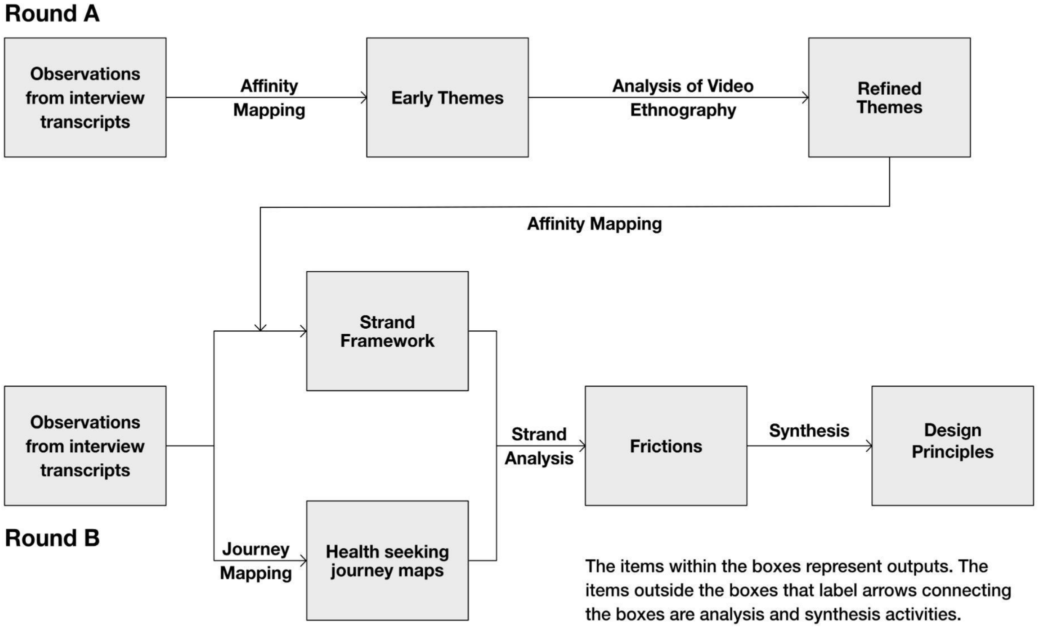

Round A
Observations from interview transcripts
Affinity Mapping
Early Themes
Analysis of Video Ethnography
Refined Themes
Affinity Mapping
Strand Framework
Observations from interview transcripts
Round B
Journey Mapping
Health seeking journey maps
Strand Analysis
Frictions
Synthesis
Design Principles
The items within the boxes represent outputs. The items outside the boxes that label arrows connecting the boxes are analysis and synthesis activities.

Figure 8. Process map of analysis and synthesis activities. Flowchart © Project ARC.

This section focuses primarily on analysis and synthesis along with descriptions of some interim outputs where needed. The main outputs, i.e. the Frictions and Design Principles are discussed in the outputs section.

Round A: Mapping Affinities to Arrive at Early Themes

Takashi Iba et al describe *clustering* as a *pattern mining* activity (Iba, Yoshikawa, & Munakata, 2017). Clustering as understood in the context of Project ARC can be understood simply as the act of bringing together observations according to some set of rules. In the beginning of this activity the *patterns* are not clear. At this stage, the process is driven by trial and error. As more and more observations are brought together, however, a pattern or more likely a number of patterns, which themselves are likely linked, emerge. Clusters begin to represent meaningful themes, the linked themes themselves evolve into narratives and at times, insights into the phenomenon being researched.

Affinity mapping, as the process of clustering is usually referred to in design thinking, formed the core of our analytical process. Research teams across South Africa and Bangladesh conducted their analysis together. This took the form of a digital whiteboard (we used the MIRO platform) where findings from research interviews were clustered together highlighting themes that emerged across both countries. While we did find a lot of resonance across the two countries, there were some themes that were more prominent in one rather than the other. Briefly, the themes identified in the first round of research included:

1. Dialogues as Pathways to Action, which explored the criticality of dialogue between health seekers and the health system.
2. Contextualisation of information, which focused on the need to make health messaging and information relatable to health seekers.
3. The trust ladder, which broadly explored the crucial role of trust in the public health ecosystem.
4. Limited access for the poor, which focused on the incredible challenges that those in the lower socio-economic segments face while seeking healthcare
5. Pandemic related disruptions
6. Social Health Infrastructure, which looked at care networks around individuals and the crucial role these networks play in keeping individuals healthy and in helping health seekers access healthcare.
7. Healing and treatment, which looked at the idea of healing when compared to medical treatment and the role that this idea plays in shaping perceptions among seekers around modern medicine.
8. Income vs Healthcare Expenditure, which focused on understanding healthcare expenditure within the context of the overall income of a household.
9. Fear and behavior, which, especially in the light of the pandemic, looked at how fear shapes behavior of health seekers.
10. Loneliness and disconnection, which focused on the way the pandemic had isolated health seekers and the impact that this was having on their mental health.

Refining Themes: Ethnographic Analysis

The data collected as part of the video ethnography was analyzed separately. To analyze ethnographic data, video clips were first uploaded to video management platform Big Sofa and translated. Multi-day analysis was then conducted online using an analytic framework that contained pre-determined questions to be answered/explored by each ethnographic task.

In South Africa, the local ethnographer, together with the Ipsos team, analyzed the footage and responses using an anthropological lens. Of particular note during this phase was participants' experiences queuing up to access public healthcare, the experience in the queue itself, contrasted with other experiences of healthcare such as visiting the pharmacy, using traditional medicine etc. Further tasks probing deeper into healthcare experiences were discussed between local ethnographers and the Ipsos team, and were proposed to participants. This was to ensure the right questions were being asked and that the research was participant led.

After these final tasks were complete, the Ipsos team and local ethnographers collaboratively analyzed the new footage, responses from participants, and fieldnotes from interviews with the participants (conducted throughout the research process). Particular attention was paid to the cultural context of the participants, their family and community dynamics, as well as the relations between various actors within the healthcare system.

In Bangladesh, after the ethnographic phase was complete, the video footage as well as field notes from the interviews, and observations from the local ethnographer, were analyzed. Three internal analysis sessions took place, whereby an anthropological lens was applied to the findings with the intention of understanding how cultural context shapes and may determine understandings of health and relationships with healthcare systems.

Analysis Frameworks: Strand Framework and Mapping Journeys of Health Seekers

An affinity mapping or clustering approach was used for analyzing the data collected from the second round of design research as well. However, in this round, since refined themes had already been articulated, there were pre existing clusters to serve as starting points for the exercise. Two clear pathways emerged from this analysis, which led to the identification of Frictions and Design Principles, the core outputs of Project ARC.

Strand Framework

Over the past 15-20 years there has been widespread acceptance of the social determinants of health (Braveman, Egerter, & Williams, 2011). The World Health Organization (WHO) recognises a number of factors that can *influence health in positive and negative ways* (Social determinants of health, n.d.). These are:

1. Income and social protection
2. Education
3. Unemployment and job insecurity
4. Working life conditions
5. Food insecurity
6. Housing, basic amenities and the environment
7. Early childhood development
8. Social inclusion and non-discrimination
9. Structural conflict
10. Access to affordable health services of decent quality

To complement and build on these determinants, which are ostensibly conditions that influence the health of individuals as evidenced by over a decade of research, the Project ARC team sought to discover and develop the factors that health seekers themselves identify as constituent parts of their health. Our core line of inquiry here was, "what does health mean for individuals and communities". Unsurprisingly the constituent parts of health we discovered are related to the social determinants of health, but unlike the social determinants of health, which are (or at least understood as) factors that influence health, the strands we discovered were, in many ways, for seekers, health itself. One of the key insights that emerged in ARC was that health seekers understand their own health in an expansive way. This understanding of health can be broken into constituent parts for analytical purposes but for health seekers, they are not discrete components that they consider individually but are more akin to an indivisible whole of entangled concerns that drive their perception of health.

For Project ARC, this led to the **Strand Approach** of understanding health. The strands that we identified were:

1. *Physical health* - the ability to perform the daily activities of one's choice in the absence of illness.
2. *Emotional Health* - the psychological and emotional wellbeing of an individual.
3. *Financial Health* - the ability of a person or household to support and look after themselves.
4. *Social Health* - the ability to create healthy and positive interpersonal relationships with one another to foster a supportive community.
5. *Spiritual Health* - the feeling that an individual is living a meaningful life, in line with their moral code of conduct and belief system.
6. *Environmental Health* - the ability to live in a safe, stable environment in which an individual can live their life the way that they choose to.

According to our findings these six strands come together to form a holistic perception of health among individuals and communities and stress on any of these strands is often seen as a stress on their overall health. The diagram below visualizes this approach as a rope consisting of strands.

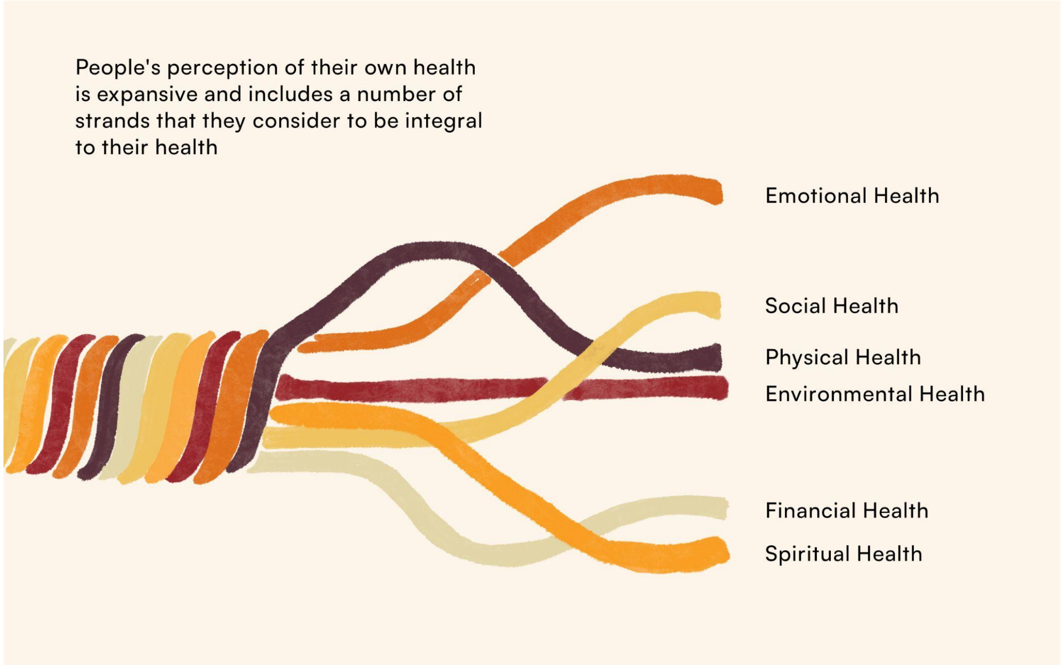
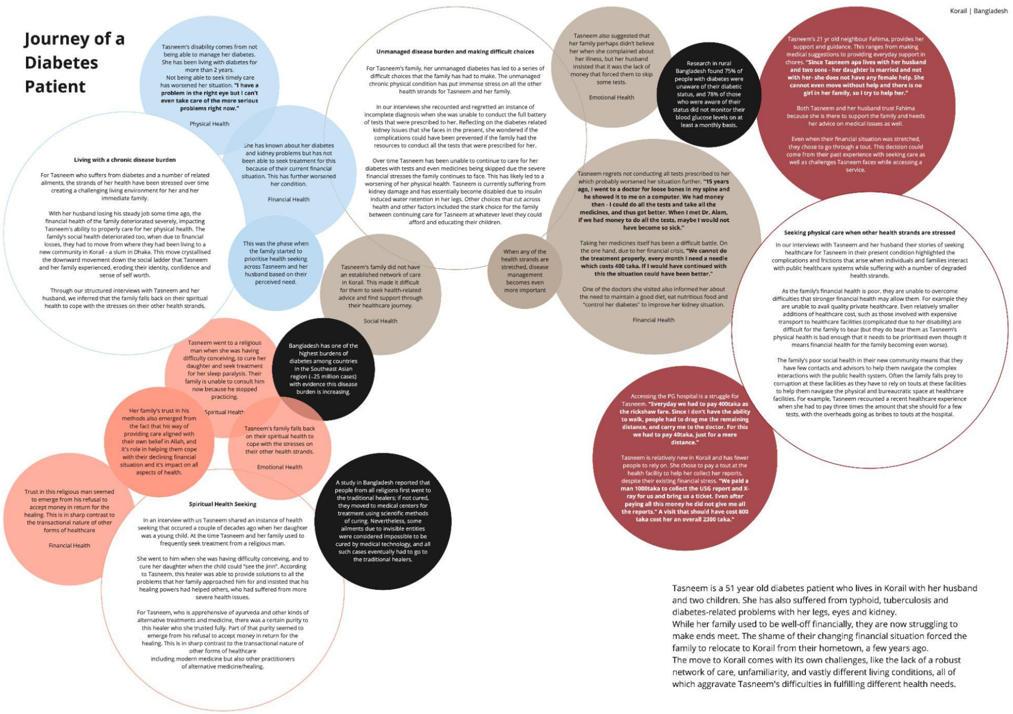

People's perception of their own health is expansive and includes a number of strands that they consider to be integral to their health
Emotional Health
Social Health
Physical Health
Environmental Health
Financial Health
Spiritual Health

Figure 9: Health Strands. Illustration © Project ARC.

Once the strand based approach was articulated, it formed a core component of further analysis, centering the concerns of health seekers and helping identify points of friction between the health system and the people who use it.

Health Seeking Journey Maps

Mapping a user's journey as they use a product or a service is a critical design thinking tool (Design thinking bootleg, n.d.). In most design-led public health projects this would likely form an integral part of the methodology and would typically involve mapping journeys of health seekers as they access healthcare services – understanding the barriers and enabling factors in these journeys as well as seeker's experiences through various points in the journey (Bartlett et al., 2022). After detailed health seeking journeys from participants were captured in Round B, visual journey maps were created for ease of analysis. The journey maps broke a health seeking journey into clear constituent parts, which were often inflection points in these journeys, such as, for example, a diagnosis. The refined themes, which were updated after the clustering exercise in Round B were used as lenses to conduct preliminary analysis of these journey maps. However, the most effective method of analysis emerged when the team began to leverage the Strand Approach to analyze the health seeking journeys. This approach led to the final outputs of Project ARC, which are described in the next section.



Journey of a Diabetes Patient

Korail | Bangladesh

Tasneem's disability comes from not being able to manage her diabetes. She has been living with diabetes for more than 2 years. Not being able to seek timely care has worsened her situation. **"I have a problem in the right eye but I can't even take care of the more serious problems right now."**

Physical Health

Living with a chronic disease burden

For Tasneem who suffers from diabetes and a number of related ailments, the strands of her health have been stressed over time creating a challenging living environment for her and her immediate family.

With her husband losing his steady job some time ago, the financial health of the family deteriorated severely, impacting Tasneem's ability to properly care for her physical health. The family's social health deteriorated too, when due to financial losses, they had to move from where they had been living to a new community in Korail - a slum in Dhaka. This move crystallised the downward movement down the social ladder that Tasneem and her family experienced, eroding their identity, confidence and sense of self worth.

Through our structured interviews with Tasneem and her husband, we inferred that the family falls back on their spiritual health to cope with the stresses on their other health strands.

She has known about her diabetes and kidney problems but has not been able to seek treatment for this because of their current financial situation. This has further worsened her condition.

Financial Health

This was the phase when the family started to prioritise health seeking across Tasneem and her husband based on their perceived need.

Unmanaged disease burden and making difficult choices

For Tasneem's family, her unmanaged diabetes has led to a series of difficult choices that the family has had to make. The unmanaged chronic physical condition has put immense stress on all the other health strands for Tasneem and her family.

In our interviews she recounted and regretted an instance of incomplete diagnosis when she was unable to conduct the full battery of tests that were prescribed to her. Reflecting on the diabetes related kidney issues that she faces in the present, she wondered if the complications could have been prevented if the family had the resources to conduct all the tests that were prescribed for her.

Over time Tasneem has been unable to continue to care for her diabetes with tests and even medicines being skipped due the severe financial stresses the family continues to face. This has likely led to a worsening of her physical health. Tasneem is currently suffering from kidney damage and has essentially become disabled due to insulin induced water retention in her legs. Other choices that cut across health and other factors included the stark choice for the family between continuing care for Tasneem at whatever level they could afford and educating their children.

Tasneem's family did not have an established network of care in Korail. This made it difficult for them to seek health-related advice and find support through their healthcare journey.

Social Health

When any of the health strands are stretched, disease management becomes even more important

Tasneem also suggested that her family perhaps didn't believe her when she complained about her illness, but her husband insisted that it was the lack of money that forced them to skip some tests.

Emotional Health

Research in rural Bangladesh found 75% of people with diabetes were unaware of their diabetic status, and 78% of those who were aware of their status did not monitor their blood glucose levels on at least a monthly basis.

Tasneem regrets not conducting all tests prescribed to her which probably worsened her situation further. **"15 years ago, I went to a doctor for loose bones in my spine and he showed it to me on a computer. We had money then - I could do all the tests and take all the medicines, and thus got better. When I met Dr. Alam, if we had money to do all the tests, maybe I would not have become so sick."**

Taking her medicines itself has been a difficult battle. On the one hand, due to her financial crisis, **"We cannot do the treatment properly, every month I need a needle which costs 400 taka. If I would have continued with this the situation could have been better."**

One of the doctors she visited also informed her about the need to maintain a good diet, eat nutritious food and "control her diabetes" to improve her kidney situation.

Financial Health

Tasneem's 21 yr old neighbour Fahima, provides her support and guidance. This ranges from making medical suggestions to providing everyday support in chores. **"Since Tasneem apa lives with her husband and two sons - her daughter is married and not with her- she does not have any female help. She cannot even move without help and there is no girl in her family, so I try to help her."**

Both Tasneem and her husband trust Fahima because she is there to support the family and heeds her advice on medical issues as well.

Even when their financial situation was stretched, they chose to go through a tout. This decision could come from their past experience with seeking care as well as challenges Tasneem faces while accessing a service.

Seeking physical care when other health strands are stressed

In our interviews with Tasneem and her husband their stories of seeking healthcare for Tasneem in their present condition highlighted the complications and frictions that arise when individuals and families interact with public healthcare systems while suffering with a number of degraded health strands.

As the family's financial health is poor, they are unable to overcome difficulties that stronger financial health may allow them. For example they are unable to avail quality private healthcare. Even relatively smaller additions of healthcare cost, such as those involved with expensive transport to healthcare facilities (complicated due to her disability) are difficult for the family to bear (but they do bear them as Tasneem's physical health is bad enough that it needs to be prioritised even though it means financial health for the family becoming even worse).

The family's poor social health in their new community means that they have few contacts and advisors to help them navigate the complex interactions with the public health system. Often the family falls prey to corruption at these facilities as they have to rely on touts at these facilities to help them navigate the physical and bureaucratic space at healthcare facilities. For example, Tasneem recounted a recent healthcare experience when she had to pay three times the amount that she should for a few tests, with the overheads going as bribes to touts at the hospital.

Tasneem went to a religious man when she was having difficulty conceiving, to cure her daughter and seek treatment for her sleep paralysis. Their family is unable to consult him now because he stopped practicing.

Spiritual Health

Bangladesh has one of the highest burdens of diabetes among countries in the Southeast Asian region (~25 million cases) with evidence this disease burden is increasing.

Her family's trust in his methods also emerged from the fact that his way of providing care aligned with their own belief in Allah, and it's role in helping them cope with their declining financial situation and it's impact on all aspects of health.

Tasneem's family falls back on their spiritual health to cope with the stresses on their other health strands.

Emotional Health

Trust in this religious man seemed to emerge from his refusal to accept money in return for the healing. This is in sharp contrast to the transactional nature of other forms of healthcare

Financial Health

Spiritual Health Seeking

In an interview with us Tasneem shared an instance of health seeking that occured a couple of decades ago when her daughter was a young child. At the time Tasneem and her family used to frequently seek treatment from a religious man.

She went to him when she was having difficulty conceiving, and to cure her daughter when the child could "see the jinn". According to Tasneem, this healer was able to provide solutions to all the problems that her family approached him for and insisted that his healing powers had helped others, who had suffered from more severe health issues.

For Tasneem, who is apprehensive of ayurveda and other kinds of alternative treatments and medicine, there was a certain purity to this healer who she trusted fully. Part of that purity seemed to emerge from his refusal to accept money in return for the healing. This is in sharp contrast to the transactional nature of other forms of healthcare including modern medicine but also other practitioners of alternative medicine/healing.

A study in Bangladesh reported that people from all religions first went to the traditional healers; if not cured, they moved to medical centers for treatment using scientific methods of curing. Nevertheless, some ailments due to invisible entities were considered impossible to be cured by medical technology, and all such cases eventually had to go to the traditional healers.

Accessing the PG hospital is a struggle for Tasneem. **"Everyday we had to pay 400taka as the rickshaw fare. Since I don't have the ability to walk, people had to drag me the remaining distance, and carry me to the doctor. For this we had to pay 40taka, just for a mere distance."**

Tasneem is relatively new in Korail and has fewer people to rely on. She chose to pay a tout at the health facility to help her collect her reports, despite their existing financial stress. **"We paid a man 1000taka to collect the USG report and X-ray for us and bring us a ticket. Even after paying all this money he did not give me all the reports." A visit that should have cost 800 taka cost her an overall 2300 taka."**

Tasneem is a 51 year old diabetes patient who lives in Korail with her husband and two children. She has also suffered from typhoid, tuberculosis and diabetes-related problems with her legs, eyes and kidney.
While her family used to be well-off financially, they are now struggling to make ends meet. The shame of their changing financial situation forced the family to relocate to Korail from their hometown, a few years ago.
The move to Korail comes with its own challenges, like the lack of a robust network of care, unfamiliarity, and vastly different living conditions, all of which aggravate Tasneem's difficulties in fulfilling different health needs.

Figure 10. A sample of the journey mapping exercise. Screenshot © Project ARC.

OUTPUTS

As described earlier, the two core objectives of Project ARC were:

1. To understand the experiences of health seekers as they interacted with a number of healthcare channels in order to identify frictions and opportunities (to improve their experiences), using the COVID-19 pandemic as an inflection point.
2. To frame a set of design principles that are aimed at addressing the frictions that we identified from our research.

The two outputs of Project ARC discussed below each address one of these objectives.

Frictions

Using the Strand Approach, inflection points in health seeking journeys were analyzed to better understand the sources of frustrations (and at times, satisfaction) of health seekers, which could just as easily emerge from stresses in their financial health, social health, spiritual health as their physical health. These frustrations and failures were identified, categorized and clustered. These clusters were then labeled and connections between them were explored. What emerged was essentially a set of **Frictions** – gaps between health seeker expectations from the healthcare system, and what providers (primarily public health but even other types of providers such as private healthcare providers or traditional practitioners) were willing and able to provide them. Apart from being barriers, these frictions, perhaps more importantly, are also opportunities for interventions and innovations. These frictions fall within two broad and interrelated buckets of the typical **health journey** and the **[lack of] enabling factors** that contribute to the success **[failure]** of the health journey. They are briefly described below.

- The health journey:
    - **Awareness & Knowledge**

      The health system is often equipped to recognise a patient only after a successful diagnosis and patients are left to navigate the initial stages of their journey with minimal formal guidance.
    - **Accessing the system**

      Through a healthcare journey, a health seeker has to make important financial, emotional, social, and spiritual decisions and sacrifices that have consequences on their health and the health of their families. These decisions take the form of 'tradeoffs', where certain strands are prioritized over others. While seekers are expected to make multiple trade-offs in favor of their physical health, they may perceive risk differently than their health providers.
    - **Adherence & Maintenance**

      Upon diagnosis, seekers with serious ailments embark on an emotional transition from seeker to long-term patient, which is often a daunting experience for the seeker because of the trauma they experience from the diagnosis. Despite this, they are required to make this transition swiftly and without time and support.
- [Lack of] enabling factors:
    - **Dialogue/Trust/Understanding**

      The absence of dialogue can lead to an understanding gap, which over time can result in reduced trust in the health system. This becomes a vicious cycle that compounds over time. As a consequence, seekers may be left feeling confused, disempowered, ill-equipped in managing their own health journey, and unable to deal with their side effects.

- **Social Networks**

  Patients are part of an expansive social network, which includes family, friends, neighbors and non-formal health providers among others. By failing to leverage this network of care in a patient's treatment, the system does not equip existing care-givers with information and skills that could improve a seeker's health journey.
- **Intermediaries**

  Seekers need various forms of support to physically, emotionally and financially navigate a complex, at times bureaucratic public health system. While there is a large demand for this, the lack of formalized roles or solutions means that this support is provided largely by unregulated actors, such as touts or pharmacists, who are accountable neither to the seekers nor the system.

Design Principles

Design Principles are a set of fundamental positions used to guide the design process; they are not mere suggestions of activities but assertions that guide the designer to more effective outcomes (Mattson & Wood, 2014). Some scholars have added that "principles are not simply a listing of goals but rather a set of methodologies to accomplish the goals" (Anastas & Zimmerman, 2003). For ARC it is important that principles help provide a pathway for public health systems actors and other stakeholders in global health to arrive at better, more user centered health systems in the future.

The ARC team framed design principles ostensibly to address the frictions. However, as is discussed below, these principles were also aligned with objectives of public health systems. In this exercise the ARC team relied on an extensive literature review of existing innovations both within public health systems as well as those outside of it. Further, the team also sought inspirations from *hacks* that communities and individuals themselves arrive at to overcome frictions they face in accessing and receiving healthcare.

Digital strategies will play a critical role in strengthening health systems and they have been formally recognized as a strategy to help meet the Sustainable Development Goals and universal health coverage targets. However, our principles also reflect the limitations of digital strategies and the crucial role of in-person efforts in healthcare, particularly for the vulnerable. This recognition was formalized by the WHO in its 2019 guidelines and recommendations on digital interventions for health system strengthening (Recommendations on digital interventions, 2019). The guidelines, "urges readers to recognize that digital health interventions are not a substitute for functioning health systems, and that there are significant limitations to what digital health is able to address." Research evidence from ARC underscores this, and our principles provide a necessary provocation for developing a hybrid *phygital* approach to health systems in the future; striking the right balance between digital and in-person efforts will be key in road mapping the health systems of the future. As such, the diagram below presents "Everything is Physical; Everything is Digital" as the central provocation.

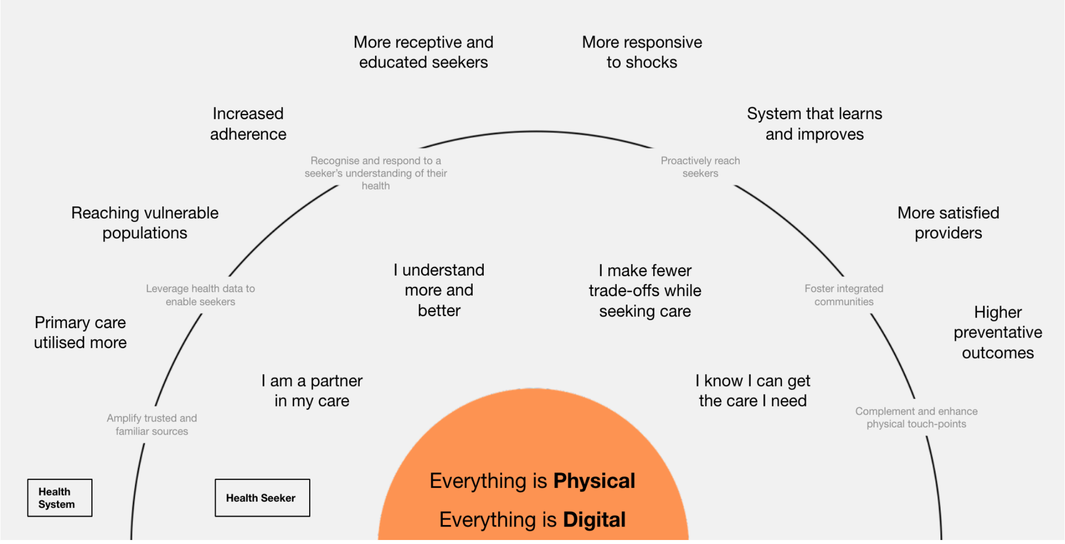

More receptive and educated seekers
More responsive to shocks
Increased adherence
System that learns and improves
Recognise and respond to a seeker's understanding of their health
Proactively reach seekers
Reaching vulnerable populations
More satisfied providers
I understand more and better
I make fewer trade-offs while seeking care
Leverage health data to enable seekers
Foster integrated communities
Primary care utilised more
Higher preventative outcomes
I am a partner in my care
I know I can get the care I need
Amplify trusted and familiar sources
Complement and enhance physical touch-points
Health System
Health Seeker
Everything is **Physical**
Everything is **Digital**

Figure 11. Design principles, patient needs, and health system outcomes. Illustration © Project ARC.

The innermost arc around this provocation presents a distilled version of the learnings from Project ARC regarding health seekers' needs and expectations from health systems. Briefly these include:

1. *I understand more and better*, which reflects the needs of health seekers to better comprehend and evaluate diagnosis, prognosis and treatment regimens when seeking care. It also reflects their need to understand their options for keeping healthy and preventing disease.
2. *I make fewer trade-offs while seeking care*, which reflects the need of health seekers to consider and address stresses in all their health strands and their expectations of healthcare options that seek to minimize conflicts between their physical health and their other strands of health.
3. *I am a partner in my care*, which reflects the need of health seekers to actively engage in their own health journey and feel a sense of agency. This also reflects the need that many health seekers express to involve their informal care networks in their health journey, which may include their friends and family but can also include neighbors and other members of their community.
4. *I know I can get the care I need*, which reflects the need of health seekers to be aware of and trust the healthcare options that the healthcare system (particularly public healthcare) makes available to them.

The outermost circle in the diagram above represents the positive outcomes that health systems are likely to observe when the needs of health seekers (represented by the innermost circle) are met. These outcomes are self-explanatory and loosely tied to the health-seeker needs.

The space between the two circles is occupied by the design principles, which are articulated to form a bridge between the health-seeker needs in the innermost circle as well as the health system objectives in the outermost circle.

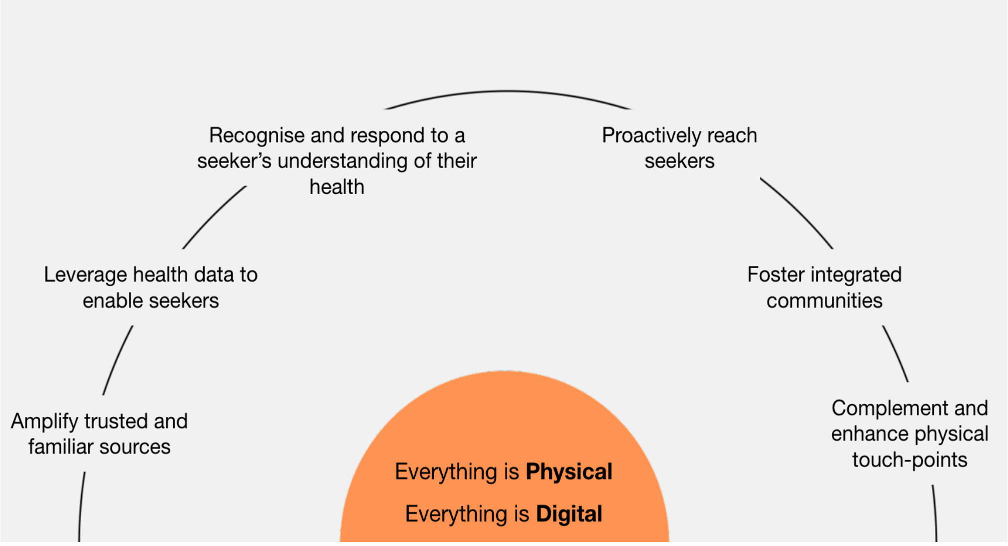

Recognise and respond to a seeker's understanding of their health
Proactively reach seekers
Leverage health data to enable seekers
Foster integrated communities
Amplify trusted and familiar sources
Complement and enhance physical touch-points
Everything is **Physical**
Everything is **Digital**

Figure 12. Design principles. Illustration © Project ARC.

These principles are briefly described as follows:

1. *Amplify trusted and familiar sources for health messaging, with appropriate moderation:* Channels of communication that include trusted and familiar sources should be used to amplify health messaging and seeking but with appropriate moderation and regulation.
2. *Recognize and respond to a seeker's expansive understanding of their health:* All the strands that make up the idea of health for seekers should be acknowledged and considered during the course of their health journey.
3. *Leverage health data to enable health seekers to better understand and take control of their care choices:* A seeker's health information should follow her across all touchpoints of healthcare. This data, apart from contributing to the health system's operational efficiency, should also be made available for seekers in formats that help them understand their health journeys better and have more control over their care choices.
4. *Complement and enhance, not replace physical touchpoints of care:* Technology in health should seek to complement the in-person experience of health seekers, not aim to replace it.
5. *Proactively reach seekers and invite them to participate in their own care*: The health system should be proactive in reaching health seekers and help them make the right decisions in their health seeking journeys. Furthermore, there should be an active invitation to health seekers to participate in their own care, seeding ways of engagement that creates more personalized, sustainable and trusting journeys of care.
6. *Foster integrated communities of practice between formal providers and naturally occurring networks of care:* Formal care providers and naturally occurring networks of care should be facilitated to form an integrated community of practice to enable seekers to experience effective and mutually flourishing relationships with their care providers.

These design principles connect core health seeker needs to the objectives of the health system, particularly the public health system. We hope that they would allow designers of health interventions and policy to better sync their approaches to health seeker expectations and needs, maximizing their chances of success.

Scenarios from the Future

As a next step in the project, the ARC team are developing 'Scenarios from the Future' – a design fiction exercise that leverages our findings to imagine what resilient health systems can look like, and explores the role of physical and digital infrastructures within these systems. This exercise is allowing the project team to bring together the strands of health and the points of friction in a more imaginative way, through storytelling.

CONCLUSION

The COVID-19 pandemic as an inflection point highlighted existing lacunae in public healthcare across the world by accentuating them. The pandemic further stressed social safety nets, financial capacity and mental health of individuals, especially among marginalized communities, and made visible how crucial these were in maintaining the health of individuals. Project ARC primarily focused on demand side challenges faced by health seekers, however our inquiry partially extended to healthcare provisioning as well, especially in the way it interacts with healthcare seekers, influencing their experiences. While the specifics of the challenges that health seekers face when accessing healthcare can be very local, we believe that our geographies of focus – Bangladesh and South Africa provide an indicative understanding of the larger patterns of these frictions, especially in Low and Middle Income Countries (LMICs). A human centered design led approach, which included video ethnography allowed us to focus on the experiences of health seekers while accessing healthcare and how gaps in these experiences often lead to poor health outcomes. Apart from challenges and barriers that individuals face while accessing healthcare, our learnings are also informed by community led innovations and workarounds, formal and informal that make individuals more resilient to shocks to their health. We also took into account public health interventions and programs that have worked by recognizing and addressing points of friction in accessing healthcare and adhering to treatment regimens. The design principles that emerged from these learnings are framed as guides for future health systems where these gaps can be addressed as far as possible, while keeping in mind the larger constraints around public healthcare that may continue to exist. The design principles are sensitive to the reality of digital efforts becoming increasingly crucial in complementing in-person care as health systems across LMICs seek cost effective ways to improve healthcare options, especially for marginalized communities. By recognizing the core needs of health seekers, identifying the frictions they experience while accessing healthcare, and framing principles for future health systems, we hope that we can contribute towards a more seeker centric healthcare ecosystem.

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NOTES

1. An individual's care network typically involves their family, friends, neighbors and others who play a crucial role in keeping them healthy and helping them recover from illnesses. This idea is explored in more detail later in this paper.

2. The other being—informing the design of future health system interventions, which is described in more detail later in the paper.

3. The Global Fund supported programs across 106 countries reported disruption in 85% of HIV programs, 78% of TB programs and 73% of malaria as a result of the COVID-19 pandemic (Global Fund Survey, 2020).

4. For e.g., parents of newborn babies, people with infectious diseases, women with a need for family planning services, people needing catastrophic health hazard treatments.

5. A small advisory group was created in South Africa and Bangladesh. In parallel a global advisory group was also created. The purpose of these groups was to provide inputs both in refining our lines of inquiry for research as well as to be a sounding board for analyzed findings and insights. Members included representatives from grassroots and non-governmental organizations, government, public health, media and advocacy-centric organizations, and international development organizations.

6. Those who have not accessed the public healthcare system in at least 12 months.

7. Quicksand, India and Matchboxology, South Africa are practitioners of human centered design and design research, while Ipsos MORI, UK brought to bear their expertise in qualitative research, quantitative research and video ethnography. Similarly, partners brought together a number of analytical techniques that ranged from design oriented methods such as affinity mapping and journey mapping to video ethnographic analysis.

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With the Phone in the Field

Making the Ethnographic Toolbox Resilient to Change

SIGNE HELBO GREGERS SØRENSEN, *Alexandra Institute*

The characteristic smell that makes you think of a summer cabin and the warm feeling when touching a wooden surface. It was such sensory insights that we hoped to obtain during a study with the aim to explore people's experiences of living in wooden houses. But then the COVID pandemic hit. Instead, we had to find ways of entering people's homes through digital means and at a distance. One day during the study we received a message from one of the informants via the app that was used to collect snapshots of their homes:

> *" (..) But I see no reason in showcasing my private home on video and if you can't proceed without it, I'm done with your silly study…"*

With the phone in the field, what had suddenly happened?

This submission explores these digitally mediated encounters with a post-phenomenological lens, as it can give us insight as to what happens when trying to make ethnography resilient to change. By reflecting on technology's mediating role, we can harvest its great potentials for strengthening the ethnographic toolbox.

Keywords: mobile probe, technology, sensory, relations, mediation

A multi-storey wooden apartment complex in Denmark where the study was conducted. Photo by Laura Lynggaard Nielsen.

Signe Sørensen is a Techno-Anthropologist at the Alexandra Institute. She is driven by understanding technologies and humans, and what happens in this fascinating amalgamation. In her work she always strives to be a voice for the users – the humans – when developing and seeking new technological possibilities. Understanding people's needs and wishes when developing technological solutions that really makes a difference is what makes her world kick-ass.

The Myth of The Pipeline Problem

Creating a Diverse and Thriving Team

SHAKIMA JACKSON-MARTINEZ, *Senior Director of Diversity, Equity, and Inclusion at AnswerLab*
with support from Kristin Zibell, *Director of Products and Services at AnswerLab*

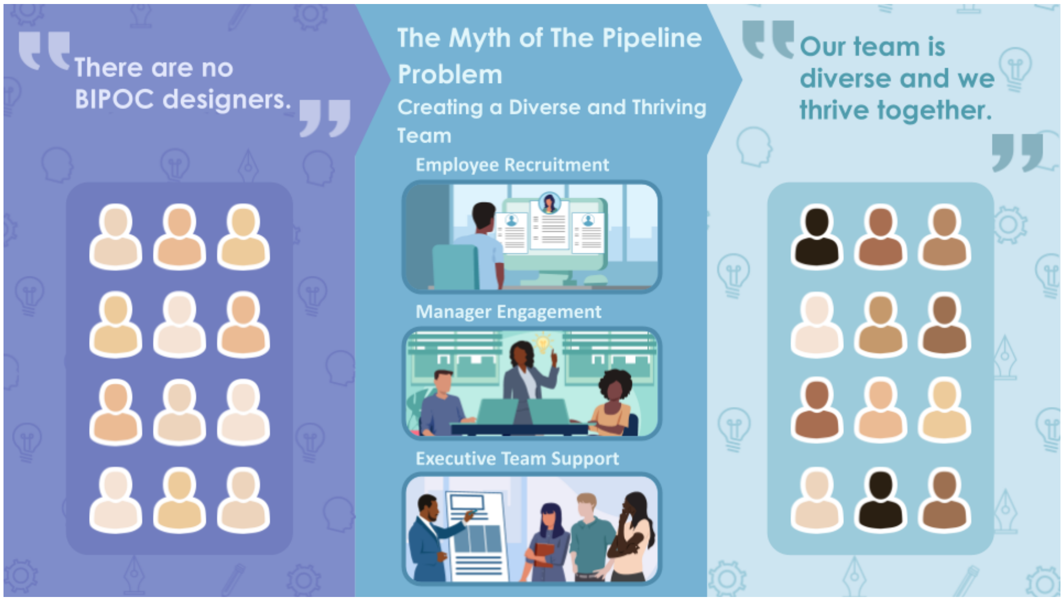
Corporate leaders issued countless statements decrying racism and investing in diversity, equity, and inclusion (DEI) efforts in 2020. As a result of the pandemic and the ongoing racial reckoning that year, the overlap between societal events and corporate commitments became sharply visible. But the actions on those commitments, less so.

Focusing on DEI sparks all sorts of biased statements from colleagues like, "There are no Black/Trans/Women researchers," "We don't want quality to suffer," and "There's no pipeline, these folks just aren't out there."

In the face of these false and racist sentiments, researchers, leaders, and managers can create diverse and thriving teams.

At the end of this PechaKucha, the audience will have instructions and examples so they can create a diverse and thriving team and support a resilient culture.

Shakima Jackson-Martiniz, Senior Director of DEI at AnswerLab, a research and insights firm, has done just that. In this PechaKucha, she will tell the story of how she increased employee diversity by 29% and is moving forward towards a 50% diversity goal. She'll share the three pillars necessary to create a representative and resilient researcher workforce. She'll describe the challenges she faced along the way and how she addressed them. Ms. Jackson-Martinez will walk through next steps to foster further inclusivity and belonging at any organization.


"There are no BIPOC designers."
The Myth of The Pipeline Problem
Creating a Diverse and Thriving Team
Employee Recruitment
Manager Engagement
Executive Team Support
"Our team is diverse and we thrive together."

The Myth of the Pipeline Problem by AnswerLab's Design Team

2022 EPIC Proceedings pp. 271–272, ISSN 1559-8918, https://www.epicpeople.org/epic

Shakima Jackson-Martinez is the Senior Director of Diversity, Equity, and Inclusion at AnswerLab where she creates, supports, manages, and measures DEI strategies and programs across the entire organization. Shakima has 10+ years of experience in Human Resources, Project Management, and Research Operations. She is deeply passionate about creating spaces where people feel a true sense of belonging and the freedom to bring their whole selves to work.

CASE STUDY SESSION

Practical Resilience

Ethnographic Impact that Endures in a Changing World

There is a general belief that moving fast (and in some cases, breaking things) is a competitive advantage for business—but this ethos can be at odds with deeper knowledge building and strategic foresight, which are the hallmarks of strong ethnographic insights. These cases re-frame ethnography as a resilient method within shifting organizational structures and needs. They offer specific frameworks and practices for utilizing contextually rich human stories to not only keep ethnography resilient, but also in service of a resilient organization.

Curator: Lisa Kleinman (*GoTo*)

Navigating the Next with Resilience

Global Portfolio Strategy in a World of Uncertainty

GIULIA ELISA GASPERI, *TRIPTK*
SAM HORNSBY, *TRIPTK*
KATE MCTIGUE, *TRIPTK*
NICHOLAS PEDEN, *TRIPTK*

Apparel & footwear (A&F) give us social identity, protection and a means of self-expression. But in a pandemic these ways of thinking about clothing are essentially pointless. When the world shuts down and stays at home, how are A&F companies supposed to figure out what's next – and how to gear themselves up for the future?

At TRIPTK, we created the What's Next Desk, a 'what do we do about it next' set of strategic and tactical actions for a global leader in apparel & footwear to respond to the behavioral shifts in consumer trends during COVID-19.

We believe ethnographic research is a powerful approach for connecting companies to the people, communities and culture they serve. And when the world shuts down and we're forced to throw the classic ethnographic playbook out the window, we still believe the ethnographic approach is possible and preferred.

We believe that at its core, Ethnography promotes empathy, contextual understanding and a cultural sensitivity that helps business be a force for good. To catalyze the adoption of approaches from Anthropology, Sociology and the social sciences more broadly, commercial practitioners must prove out the impact of ethnographic research to the corporate bottom line.

In this case study, we have furthered that endeavor in threefold ways: Making a global business resilient to the dramatic impact of COVID-19, developing a methodology set and tool kit that is resilient to change and developing strategy that is resilient to subjectivity.

Keywords: business, resilience, marketing, innovation, strategy, global, footwear & apparel, branding

INTRODUCTION

A global leader in apparel & footwear (A&F), US-headquartered VF Corp is home to some of the world's most popular outdoor, action sports and streetwear brands including The North Face, Vans, Dickies, Timberland and Supreme. With more than a thousand storefronts worldwide, the publicly listed company employs 50,000 people and reports a revenue of USD 13.8 billion.

Moving at the speed of fashion culture is essential in A&F: it allows brands to stay abreast of consumer needs and to navigate a highly competitive arena. In a category where cultural change is so fast-paced, COVID-19 pressed the pause button, turning human tragedy into anonymous statistics overnight and reducing the reaction time of brands and businesses to zero as stores were shuttered and supply chains came to a grinding halt.

In summer 2020, this meant that acute insight needs were emerging which required a leap beyond ethnography's reliance on traditional, first-hand consumer experiences. VF Corp brands still needed to stay relevant and nurture authentic consumer connections; their innovation teams still needed to ensure real consumer pain points were addressed; and their strategy folks still had to lay plans.

This case study illustrates how VF Corp partnered with TRIPTK, a global brand transformation studio, to overcome the constraints and uncertainties brought about by the global pandemic, charting a course from business decline to stable growth.

2022 EPIC Proceedings pp. 274–293, ISSN 1559-8918, https://www.epicpeople.org/epic

The case addresses resilience in 3 ways:

1. Developing a methodology set and tool kit that is resilient to change
2. Developing strategy that is resilient to subjectivity
3. Making a global business resilient to the dramatic impact of COVID-19

DEVELOPING A METHODOLOGY SET AND TOOLKIT THAT IS RESILIENT TO CHANGE

A 'mission-impossible' project scope

In the first year of the pandemic, TRIPTK was tasked with helping VF Corp to adapt the *global* business strategy of its *entire* brand portfolio (especially Vans, The North Face, Dickies and Timberland) to help them maintain revenue and *quickly* respond to future trends. VF needed answers to the following questions:

Table 1. Key areas of investigation included in VF's overall project scope

Ingoing areas of investigation: due to COVID-19…	New Value: How is the overall value proposition in A&F changing?	Health & Wellness: How are H&W trends impacting our brands and the worlds they come from?	Localization: Will there be a shift in consumer preference towards local / national A&F brands?

These are big, expansive questions – and in an ideal world, ethnography is the perfect way to answer them – especially when major tectonic shifts occur in culture everywhere, all at once, and with an outsized impact on categories like footwear and apparel.

Classical ethnography is ideal because:

- It unpacks **real consumer behaviors**, as well as the rituals and narratives in their communities that cue moments of cultural change [Sleck, 2013];
- It unlocks **market context insights**: instead of ending at each consumer household's front door, it places consumer actions in the context of market trends and dynamics [Taylor, 2017];
- It applies **foresight** methods to anticipate change by learning from people's real-life, daily journeys of anticipation and improvisation [Allen, 2021]

But in summer 2020, when in-person interactions were unthinkable and culture was evolving at warp speed, this was impossible – for the reasons outlined in table 2 below.

Table 2. Key reasons why an ideal-world ethnographic approach would have been unthinkable, and what TRIPTK's methodological approach had to solve for

We would have wanted to…	We couldn't do this because…	So we needed a methodology that could help us unpack:
Unpack **real consumer behaviors** by investigating each brand community in depth and comparing them to one another: Vans users, vs. The North Face users, vs. Dickies users, vs. Timberland users	It wasn't safe Even if it had been safe, it would have been cost prohibitive to run robust research with ~25 households per brand (=100 households)	**Culture & Social influence**, across key VF brands
Unlock **market context insights** by conducting research in top VF markets: Europe, APAC and North America – and by contrasting what we were learning about VF brands with key competitor insights	It wasn't safe Even if it had been safe, it would have been even *more* cost prohibitive: ~25 households per brand x 4 brands x 1-2 markets per region (=300-600 households)	**Context** surrounding consumers, wherever they live and shop
Apply **foresight** by investigating apparel & footwear needs, attitudes and behaviors over time – what were they like before COVID-19? What changed and why? How are weekdays different to weekends; work and free time occasions?	We only had 12 weeks Using traditional ethnography to immerse with 300-600 households would have taken at least half a year	**Change** affecting consumers over time, and informing VF business operations in the next 6-18 months

When you can't be an ethnographer, think like one

Building the What's Next Desk: a new methodology rooted in ethnographic theory

Our methodology couldn't just shift from offline to online ethnography, or focus on just one market, or just synthesize future trend reports – it had to tackle everything, everywhere, all at once.

With all that in mind, TRIPTK developed a plan to chart VF Corp's path toward business resilience.

Turning constraints into opportunities, TRIPTK built a methodology designed to shift from reactive response to scenario-based foresight through the establishment of an innovative 'What's Next Desk', which had to replace and complement full-fledged ethnographic immersion. The desk needed the following components:

1. An insight phase to help us assemble the right data
2. A strategy phase to help us interpret the data and chart a go-forward plan

We'll start with the insight component in this section, then display the strategy component in the next one. The insight component needed to be at least on par with the quality of insight we'd expect from an ideal-world, ethnographic process – and the strategy component had to deliver foresight, 6-18 months into the future.

The image below displays the methods used for the insight phase.

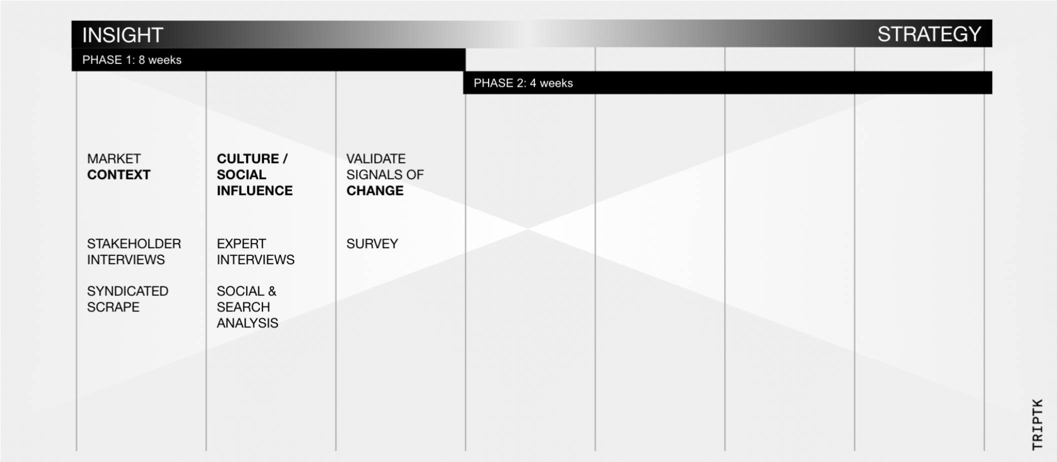

INSIGHT
STRATEGY
PHASE 1: 8 weeks
PHASE 2: 4 weeks
MARKET CONTEXT
CULTURE / SOCIAL INFLUENCE
VALIDATE SIGNALS OF CHANGE
STAKEHOLDER INTERVIEWS
SYNDICATED SCRAPE
EXPERT INTERVIEWS
SOCIAL & SEARCH ANALYSIS
SURVEY
TRIPTK

Figure 1. The Insight Phase of the What's Next Desk.
Image by © TRIPTK, used with permission

Rooted in ethnographic & social theory, the What's Next Desk draws from best-practice ethnographic principles around culture and the notion that people are social beings, socially influenced; similarly, it applies the ethnographic principles of context and change.

It situated consumers and their needs in the context surrounding them – mapped via stakeholder interviews and syndicated data scrapes. It explored culture from the top down, through the lens of global topic experts; and from the bottom up, through the analysis of social chatter and media content. The value of online, behaviorally-led ethnographic exploration is especially relevant if we consider how traditional social cohesion structures were disrupted, and social influence in the digital space was accelerated. Finally, it detected signals of societal change by comparing attitudes and behaviors of leading edge "Prosumers" and Mainstream Consumers in a global, quantitative study.

Table 3. Ethnographic principles, applied with a new approach

Ethnographic Principles	Methodology
Market Context	Stakeholder interviews Syndicated scrape
Culture / Social influence	Top-down exploration: industry / cultural expert interviews Bottom-up exploration: social listening & search trend analysis
Signals of Change	Survey / quantitative validation

BUILD YOUR OWN WHAT'S NEXT DESK: TIPS & GUARDRAILS

Start with mapping your market context – put your arms around the challenge

Context is king, and charting the confines within which to operate is critical to rally a vast client stakeholder team around a single-minded definition of success.

With the kind of expansive question we were tasked to answer ("how is the overall A&F value proposition changing?" – where does one even begin) our first step had to be to sharpen them. On the one hand, we wanted to avoid the classic pitfall of boiling the ocean, and on the other, we saw this as a great opportunity to speak to client-side folks spread across the business – anyone who would eventually come into contact with our deliverables and put them to action. There's nothing worse than a final report landing on a shelf and catching dust without ever being put to use, and we've learned that the first step to avoid that is to listen to – and really hear – what's truly going to help move the needle for client decision-makers.

How to select who to speak with? We conducted stakeholder interviews with VF team members who were best positioned to define our context: VF Corp team members in charge of all 3 priority regions (NA, EMEA & APAC) were chosen to participate.

Mapping known knowns is a helpful reflex when you're looking to avoid boiling the ocean. Next to extracting knowns from the VF brain trust, we conducted a syndicated scrape to review existing knowledge already available on topics of interest. The upside of the whole world going through cultural upheaval is that everyone's aware of it – and many are writing about it, so there's suddenly a lot of content available on the subject – which can save you a considerable amount of primary research effort.

To assemble our source list, we went broad and deep. Sources spanned industry and consumer reports (e.g. NPD, WARC), articles from within A&F and adjacent industries (e.g. Apparel Coalition, Apartment Therapy) and cultural opinion pieces (e.g. The Cut).

This context definition exercise helped us sharpen the ingoing questions and condensed the universe of existing data and perspectives into crystalized hunting grounds and hypotheses.

By combining stakeholder interviews with our syndicated scrape, we were able to break down our big, expansive questions into more manageable, finite areas of investigation, see example in table 4. We were starting to ask more manageable questions – but also, to ask the right questions, i.e. we retooled questions so they could be answered by each methodology component.

Table 4. Ingoing question and how it evolved into sharpened hypotheses / hunting grounds

Ingoing question	How is the value proposition in A&F changing?
Sample of sharpened hypotheses / hunting grounds:	Will there be a reappraisal of consumption? How will A&F purchase drivers be affected? Does sustainability matter & impact willingness to pay? Did COVID-19 create acceleration or deceleration effects?

Next, fill your biggest knowledge gaps with top-down exploration of culture in each market

Armed with a sharper set of ingoing hypotheses, we turned to global experts to shed light on global cultural shifts. Without boots on the ground in each of the regions, TRIPTK had to ensure that the insight generated in these interviews was truly representative of near- and long-term trends in Europe, APAC and North America. We recruited experts in each of these regions – and made sure to include voices from the business and the academic worlds in order to capture divergent points of view.

A key step in our process was to further hone our sharpened hypotheses into questions that covered context, culture and change – like the ones outlined in table 5.

Table 5. Sample line of questioning for Experts

Context	In the past few years, we've seen evidence of consumers desiring fewer, better things. Have you seen this reflected in shoppers from your region? If so, what drives this? If not, why? Any key differences here when you look at your market vs. global?
Culture	Are there groups (e.g. younger/older, insulated/constrained) who are critical in defining a new role for brands?
Change	In the next 6-18 months, Will brands have to work harder to create value? How? How is this similar or different compared to a previous global crisis (e.g. recession)?

During this investigation process, a few key narratives surfaced that started to shed light on how deeply COVID-19 was affecting the way consumers think about their wardrobes – and what that means for brands that live in them or aspire to be a part of them moving forward. Here are examples of how the line of questioning TRIPTK evolved for experts (and reported in Table 5 above) yielded targeted insights.

Context: wardrobes are consolidating

Question: In the past few years, we've seen evidence of consumers desiring fewer, better things. Have you seen this reflected in shoppers from your region? If so, what drives this? If not, why?

Sample answers:

> Consumers used to have wardrobes for all different occasions but are now consolidating these into a "single wardrobe". This is driven by casualization, athleisure, and a Marie-Kondo wave of simplification and evolution of consumerism. With COVID-19, people are making even more pragmatic purchasing decisions leaning towards products that offer performance and versatility. – Expert, NPD Group

> For a long time, people 'talked the talk' about less is more, but COVID-19 is calling people to action. Mindful consumerism is becoming a reality, because people's shopping habits were cut down drastically for 3-4 months, and it only takes about 6 weeks for habit change to set in. This is a total reset. – Expert, Forbes

Culture: it's happening to everyone, but people react in different ways

Question: Are there groups (e.g. younger/older, insulated/constrained) who are critical in defining a new role for brands?

Sample answers:

> We'll see more limited, pent-up demand for more special, limited-edition items among better off, insulated consumer groups. – Expert, CEO & Founder in the Fashion Industry

> Already before COVID-19, mid-range high earners would trade up instead of buying pure luxury brands, indulging in specific purchases rather than across the board. It's a lot harder for brands to trade up their entire proposition to the luxury space. – Expert, Forbes

Change: the evolving role of brands and retail

Question: In the next 6-18 months, will brands have to work harder to create value? How?

Sample answers:

> Brands like the ones in the VF portfolio tend to be better set up for this shift – going into a fashion world of more stable functional products that will last a long time, will still be styled 'right'. Stepping away from fads (here today, gone tomorrow), as brands invest more in smaller drops throughout the year and less in fashion show seasons. – Expert, Forbes

> People will be looking to brand values more than ever: they are key to their story and have aspirational appeal. Big brands will have to act small: limited edition collaborations and collections. – Expert, NPD

> Practical value will increase – if you look at the headwind of how increasingly workwear and outerwear values have influenced style – what might argue that practical values (functionality, durability, versatility) gave them a symbolic value in fashion. – Expert, Nielsen Global Intelligence

A synthesis of responses like these became TRIPTK's starting point of ingoing, top-down insights.

Then compare and contrast top-down insights with a bottom-up exploration of social influence

We couldn't immerse ourselves in our target audience's real worlds – so we turned to exploring their digital worlds instead. We replaced traditional, offline ethnography with online, behaviorally-led ethnographic exploration to complement top-down expert perspectives with real-world consumer behavior. COVID-19 had disrupted traditional social cohesion structures – but it never stopped people from finding other ways to address their needs. As the real world shut down, the digital world took over. More than ever before, people turned to the internet to search for things, express themselves, socialize with others and shop.

Once again, we looked at our ingoing questions and retooled them to fit our methodology. Social listening and trend analysis are at their best when they can answer 'how much' and 'for how long' – type questions, like the ones presented in table 6.

Table 6. Sample of bottom-up investigation areas for social listening & search trend analysis

Ingoing question	How is the value proposition in A&F changing?
Sample of social listening queries	What terms are most used in online conversations about mindful consumption? And by what target groups (e.g. younger, older)?

Next, we defined the digital exploration universe by developing keyword and source lists for each region. A digital exploration universe is a dataset that's defined through the keywords, target users and sources it's made up of. Each universe was divided into 2 components: topic and trend. Where possible, we looked for differences between consumer cohorts (e.g. gender, age).

- Topic focused on mapping consumer and brand-led online conversation volume and sentiment from the past year. The analysis was conducted in NetBase / Quid, with custom queries designed for each market. To ensure conversations focused on consumer/shopper behaviors, keywords representing each foresight factor were complemented with inclusion terms that signal consumer behavior. This exercise was done in-language for each of the regions of focus. In the case of our sustainability term investigation, we looked for online chatter that included keywords like "Marie Kondo", "#fewerbetter" and "seasonless wardrobe"

- Trend focused on search analysis, looking for signals of acceleration and deceleration in the things people were looking for or talking about online. To detect short- and long-term trends, and to distinguish between seasonal and ad-hoc COVID-19 effects, we compared data in a set of date ranges on search engines and social platforms like Twitter. In the example pictured below, we investigated how searches for sustainability signals in fashion correlate with searches in other categories, like food.

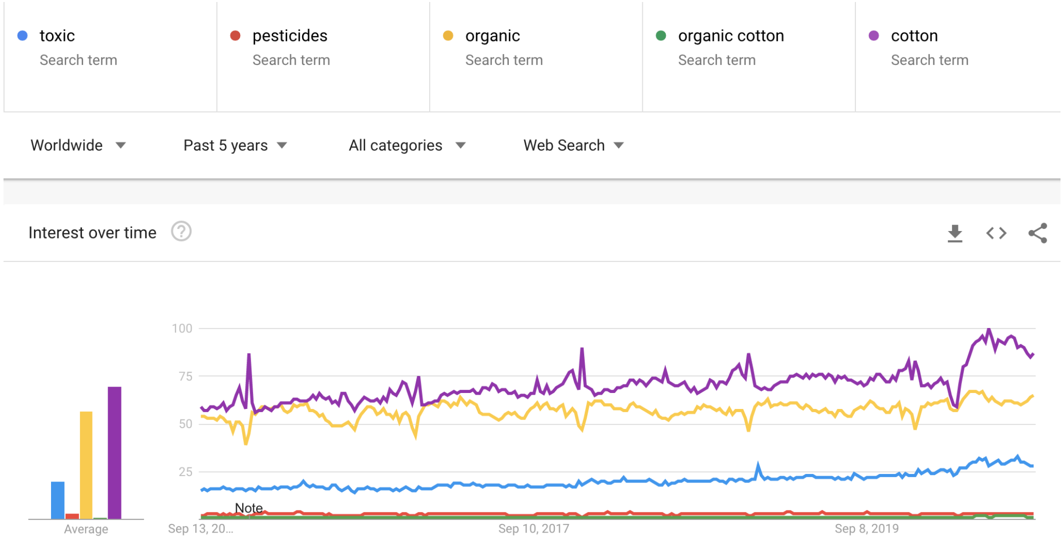

toxic
Search term
pesticides
Search term
organic
Search term
organic cotton
Search term
cotton
Search term
Worldwide
Past 5 years
All categories
Web Search
Interest over time
100
75
50
25
Note
Average
Sep 13, 20...
Sep 10, 2017
Sep 8, 2019

Figure 2. Sample search trend analysis..
Image by © TRIPTK, used with permission

Finally, validate your hypotheses to anticipate whether change will happen, and where

The work to date had successfully mapped a range of breadcrumb trails, but it had yet to point out which ones were most critical in VF Corp's pursuit of business resilience. Now that top-down and bottom-up cultural & social influence data were collected, we needed to develop a clear decision-making pathway that picked out signals of significant societal change from a vast arena of potential upcoming shifts.

'Significant change' was defined in one of three ways:

- Likely to impact the business within the defined time frame of 6-18 months
- Relevant to one or more markets of interest across China, Germany, UK, US
- Important to at least 1 in 4 of VF Corp's priority brands

To detect these signals, TRIPTK designed and fielded a survey collecting feedback from 500 respondents in each of the 4 target markets (China, Germany, UK, US). The survey audience included an even split of:

- Prosumers*: defined as today's leading-edge influencers and market drivers, Prosumers offer insight into trend development and adoption. They typically represent 20% of any market's population, and largely coincide with the Innovators and Early Adopters featured in Rogers' innovation curve.
- Mainstream consumers*: representing the remaining 80% of the population, mainstream consumers are likely to adopt Prosumer behaviors 6-18 months later.

Among each of these, the survey recruited VF brand owners/buyers/loyalists (Vans, The North Face, Timberland, Dickies) and measured their income levels, among other socio-demographic markers.

The table below highlights select survey topics covered.

Table 7. Select survey topics covered

Ingoing questions	How is the value proposition in A&F changing?
Sample of survey topics covered:	Number of A&F items bought; spend & future intention to spend Product & brand attributes important to people when buying A&F; VF and competitive brand performance against them

DEVELOPING A STRATEGY THAT IS RESILIENT TO SUBJECTIVITY: ARMING VF CORP WITH STEPS TO TAKE IN THE NEXT

Strategic principles

In the thick of the pandemic everyone was craving answers – and falling into the subjectivity trap was inevitable: content about the effects of COVID-19 on society and business exploded online, and business leaders everywhere were piecing together their own insights and plans. But everyone's content feed is different: a growing body of evidence suggests that newsfeed and social media platform algorithms narrow down what's available to display customized information to each individual (Source) .

The TRIPTK team was not immune to this effect, which is why the strategic principle of data triangulation was rigorously applied at every stage of the process. From the syndicated scrape, when sources were intentionally pulled together by multiple TRIPTK team members to temper echo-chamber effects created by the algorithm; to the final analysis phase, when data from thousands of survey participants, social listening conversations and search trend queries were synthesized to confirm or reject ingoing hypotheses. Triangulation across culture, data and business evidence helped develop recommendations that went beyond individual testimony.

Using triangulation makes it possible to apply another strategic principle: prioritizing foresight over insight. Tuning out the noise to home in on signals with the greatest predictive potential is critical to help businesses make decisions with confidence, but also at the speed of culture. We applied this principle by comparing survey responses of Prosumers to those of Mainstream Consumers: higher or lower Prosumer scores became strategic shift markers, while even scores across both groups were interpreted as 'maintain course' signals.

While a wealth of data pointed out a myriad of breadcrumb trails, we had to pick out those with the greatest potential to move VF Corp well beyond the current pandemic stage. A third strategic principle was applied: staying laser-focused on delivering holistic & meaningful impact. Of all the data gathered, only what could help VF Corp and its brands move forward was selected to inform the final strategic deliverable.

FROM METHODOLOGY TO STRATEGY

Turning the corner from methodology to strategy didn't start when data collection was complete. The key to unlocking meaningful strategic recommendations was to reverse-engineer our approach from the start.

Each step in the methodology had to play a specific role – we knew that our survey was the data-collection end point, so we had to build our ethnographic exploration with validation in mind: what questions could we answer at each stage of the exploration process? What questions couldn't be answered if not in the final validation survey?

At the end of our investigation journey, the survey became the ultimate prioritization tool: not only did it arm us with a sense of what is more or less important within each of our foresight factor investigation areas – it helped us streamline the entire strategic narrative we built for the What's Next Desk. The image below sheds light on the entire transition process – from insight to strategy.

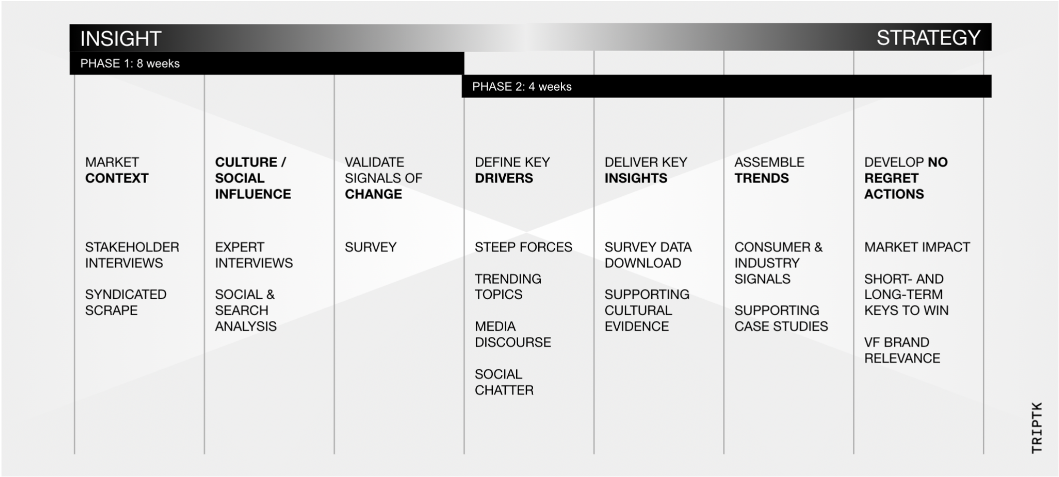

INSIGHT
STRATEGY
PHASE 1: 8 weeks
PHASE 2: 4 weeks
MARKET CONTEXT
CULTURE / SOCIAL INFLUENCE
VALIDATE SIGNALS OF CHANGE
DEFINE KEY DRIVERS
DELIVER KEY INSIGHTS
ASSEMBLE TRENDS
DEVELOP NO REGRET ACTIONS
STAKEHOLDER INTERVIEWS
SYNDICATED SCRAPE
EXPERT INTERVIEWS
SOCIAL & SEARCH ANALYSIS
SURVEY
STEEP FORCES
TRENDING TOPICS
MEDIA DISCOURSE
SOCIAL CHATTER
SURVEY DATA DOWNLOAD
SUPPORTING CULTURAL EVIDENCE
CONSUMER & INDUSTRY SIGNALS
SUPPORTING CASE STUDIES
MARKET IMPACT
SHORT- AND LONG-TERM KEYS TO WIN
VF BRAND RELEVANCE
TRIPTK

Figure 3. From methodology to strategy: the transition process.
Image by © TRIPTK, used with permission

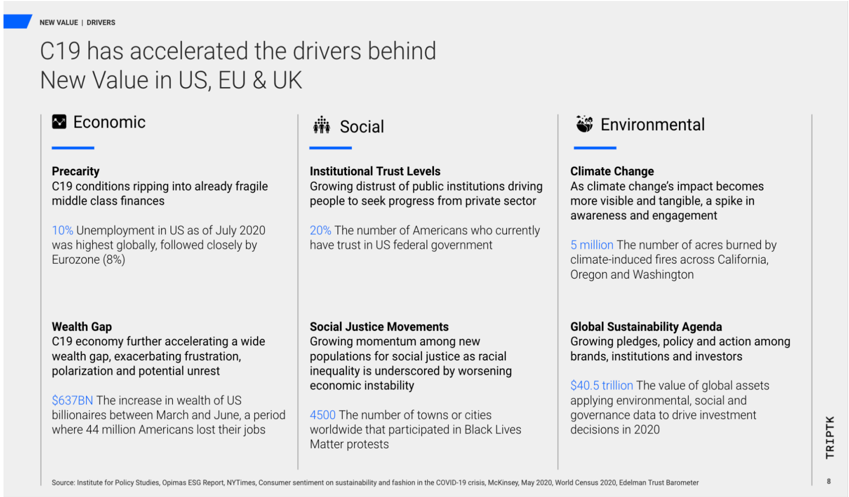
Enough with the theory already – let's take a look at how insight became strategy by showcasing an example. To illustrate the example, we will focus on the ingoing question "How is the value proposition in A&F changing?" – and walk you through the process.

Define Key Drivers

To situate consumers and their needs in the context surrounding them, TRIPTK applied the STEEP forces framework, an adaptation of F. Aguilar's 1967 PESTLE framework. The acronym represents the 5 forces shaping culture alongside consumer behaviors and attitudes: Social, Tech, Environmental, Economic, Political.

This framework was especially helpful to map signals of change and context drivers: helping VF Corp understand not only what pre-COVID forces were accelerated or decelerated or what new forces were emerging, but also in what markets they manifested more or less strongly. Survey data was used to shortlist which of the 5 STEEP forces had an outsized impact on each foresight factor.

To complement the top-down snapshot provided by STEEP, a synthesis of bottom-up key topics across social chatter and media discourse was included as well. See figures 4, 5 and 6 below for an example extracted from the What's Next Desk strategy deliverable.



NEW VALUE | DRIVERS

C19 has accelerated the drivers behind New Value in US, EU & UK

Economic

Precarity
C19 conditions ripping into already fragile middle class finances

10% Unemployment in US as of July 2020 was highest globally, followed closely by Eurozone (8%)

Wealth Gap
C19 economy further accelerating a wide wealth gap, exacerbating frustration, polarization and potential unrest

$637BN The increase in wealth of US billionaires between March and June, a period where 44 million Americans lost their jobs

Social

Institutional Trust Levels
Growing distrust of public institutions driving people to seek progress from private sector

20% The number of Americans who currently have trust in US federal government

Social Justice Movements
Growing momentum among new populations for social justice as racial inequality is underscored by worsening economic instability

4500 The number of towns or cities worldwide that participated in Black Lives Matter protests

Environmental

Climate Change
As climate change's impact becomes more visible and tangible, a spike in awareness and engagement

5 million The number of acres burned by climate-induced fires across California, Oregon and Washington

Global Sustainability Agenda
Growing pledges, policy and action among brands, institutions and investors

$40.5 trillion The value of global assets applying environmental, social and governance data to drive investment decisions in 2020

Source: Institute for Policy Studies, Opimas ESG Report, NYTimes, Consumer sentiment on sustainability and fashion in the COVID-19 crisis, McKinsey, May 2020, World Census 2020, Edelman Trust Barometer

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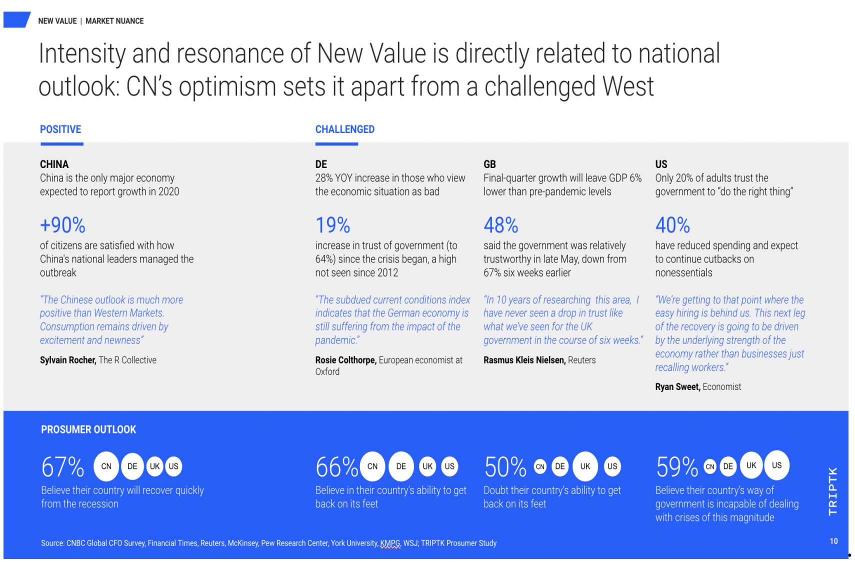
8

Figure 4. How 3 of 5 STEEP forces play an outsized role in the changing value proposition in A&F.
Image by © TRIPTK, used with permission



NEW VALUE | MARKET NUANCE

Intensity and resonance of New Value is directly related to national outlook: CN's optimism sets it apart from a challenged West

POSITIVE

CHINA
China is the only major economy expected to report growth in 2020

+90%
of citizens are satisfied with how China's national leaders managed the outbreak

"The Chinese outlook is much more positive than Western Markets. Consumption remains driven by excitement and newness"

Sylvain Rocher, The R Collective

CHALLENGED

DE
28% YOY increase in those who view the economic situation as bad

19%
increase in trust of government (to 64%) since the crisis began, a high not seen since 2012

"The subdued current conditions index indicates that the German economy is still suffering from the impact of the pandemic."

Rosie Colthorpe, European economist at Oxford

GB
Final-quarter growth will leave GDP 6% lower than pre-pandemic levels

48%
said the government was relatively trustworthy in late May, down from 67% six weeks earlier

"In 10 years of researching this area, I have never seen a drop in trust like what we've seen for the UK government in the course of six weeks."

Rasmus Kleis Nielsen, Reuters

US
Only 20% of adults trust the government to "do the right thing"

40%
have reduced spending and expect to continue cutbacks on nonessentials

"We're getting to that point where the easy hiring is behind us. This next leg of the recovery is going to be driven by the underlying strength of the economy rather than businesses just recalling workers."

Ryan Sweet, Economist

PROSUMER OUTLOOK

67% CN DE UK US
Believe their country will recover quickly from the recession

66% CN DE UK US
Believe in their country's ability to get back on its feet

50% CN DE UK US
Doubt their country's ability to get back on its feet

59% CN DE UK US
Believe their country's way of government is incapable of dealing with crises of this magnitude

Source: CNBC Global CFO Survey, Financial Times, Reuters, McKinsey, Pew Research Center, York University, KMPG, WSJ; TRIPTK Prosumer Study

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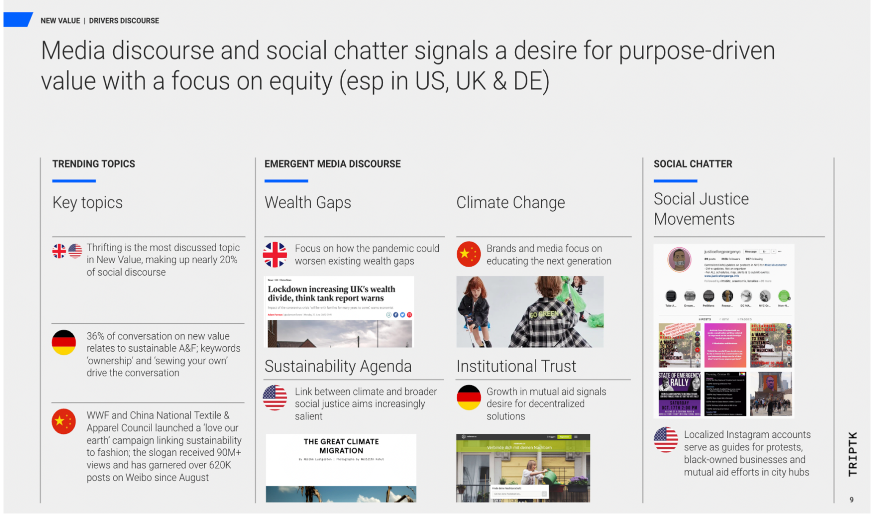
10

Figure 5. Market nuances, setting up how China stands out as a market with a more positive national outlook, which we found has a significant impact on consumer perceptions of value. Evidence includes syndicated and survey data contextualized by expert quotes.
Image by © TRIPTK, used with permission


NEW VALUE | DRIVERS DISCOURSE

Media discourse and social chatter signals a desire for purpose-driven value with a focus on equity (esp in US, UK & DE)

TRENDING TOPICS

Key topics

Thrifting is the most discussed topic in New Value, making up nearly 20% of social discourse

36% of conversation on new value relates to sustainable A&F; keywords 'ownership' and 'sewing your own' drive the conversation

WWF and China National Textile & Apparel Council launched a 'love our earth' campaign linking sustainability to fashion; the slogan received 90M+ views and has garnered over 620K posts on Weibo since August

EMERGENT MEDIA DISCOURSE

Wealth Gaps

Focus on how the pandemic could worsen existing wealth gaps

Lockdown increasing UK's wealth divide, think tank report warns

Climate Change

Brands and media focus on educating the next generation

Sustainability Agenda

Link between climate and broader social justice aims increasingly salient

THE GREAT CLIMATE MIGRATION

Institutional Trust

Growth in mutual aid signals desire for decentralized solutions

SOCIAL CHATTER

Social Justice Movements

Localized Instagram accounts serve as guides for protests, black-owned businesses and mutual aid efforts in city hubs

GO GREEN
Verbinde dich mit deinen Nachbarn
justiceforgeorgenyc
STATE OF EMERGENCY RALLY
A MARCH TO END SYSTEMIC RACISM IN MEDICINE.
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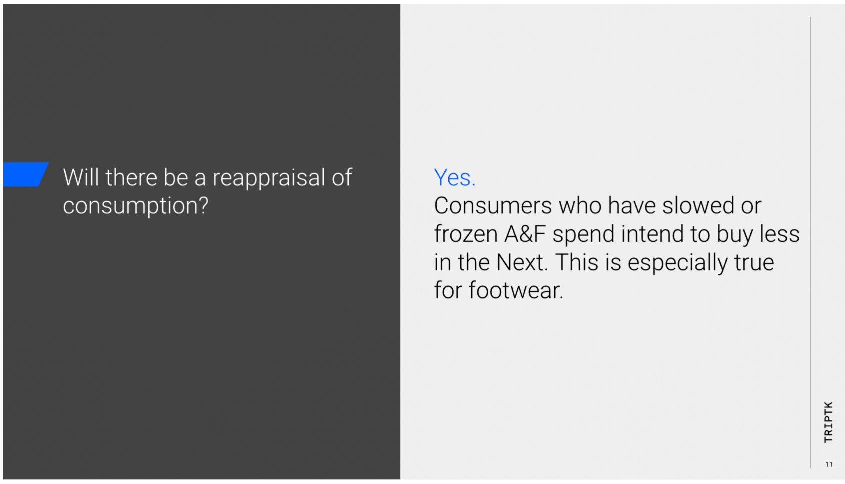
9

Figure 6. Cultural and social listening evidence extracted from trending topics & social chatter. Image by © TRIPTK, used with permission

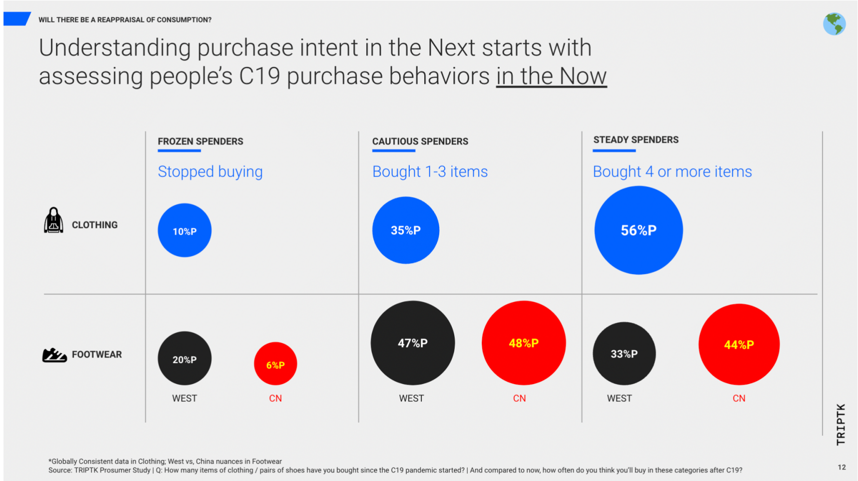
Deliver Key Insights

Survey data was instrumental in answering VF Corp's ingoing questions. We applied a straightforward Q&A approach, and complemented key survey data with supporting cultural evidence in the What's Next Desk strategy deliverable. The expansive question, "How is the value proposition in A&F changing?" was split into its more refined hunting grounds, each of which became a subchapter in the final deliverable.


Will there be a reappraisal of consumption?

Yes.
Consumers who have slowed or frozen A&F spend intend to buy less in the Next. This is especially true for footwear.

Figure 7. A straightforward Q&A approach to answering VF Corp's ingoing questions. Image by © TRIPTK, used with permission



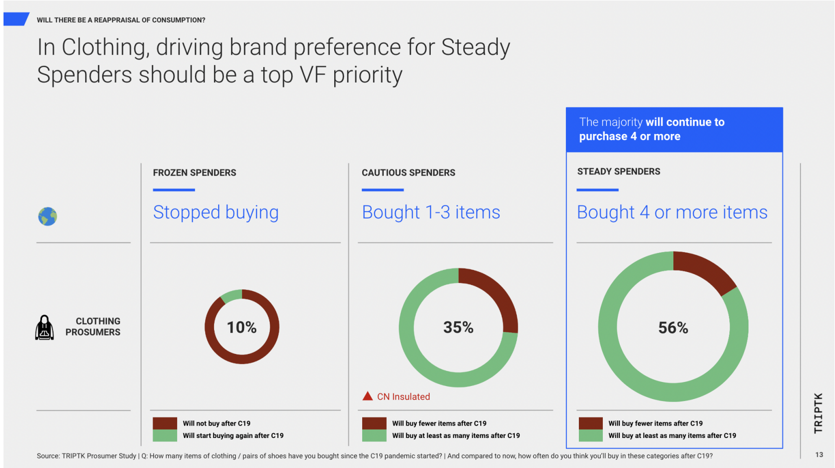
WILL THERE BE A REAPPRAISAL OF CONSUMPTION?

Understanding purchase intent in the Next starts with assessing people's C19 purchase behaviors in the Now

*Globally Consistent data in Clothing; West vs, China nuances in Footwear

Source: TRIPTK Prosumer Study | Q: How many items of clothing / pairs of shoes have you bought since the C19 pandemic started? | And compared to now, how often do you think you'll buy in these categories after C19?

Figure 8. 3 types of spenders identified in the survey, and calls out that they have different incidences in the west vs. in China. Image by © TRIPTK, used with permission



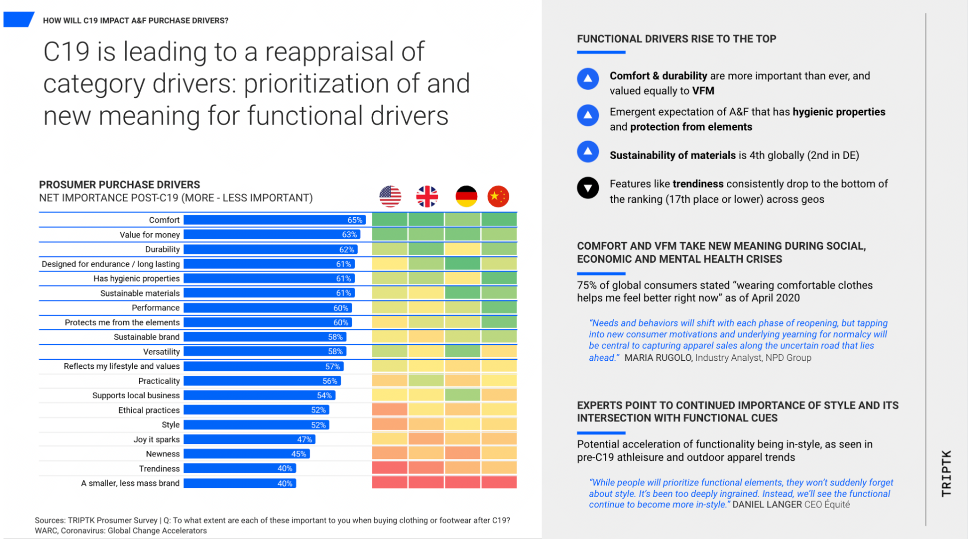
WILL THERE BE A REAPPRAISAL OF CONSUMPTION?

In Clothing, driving brand preference for Steady Spenders should be a top VF priority

The majority **will continue to purchase 4 or more**

Source: TRIPTK Prosumer Study | Q: How many items of clothing / pairs of shoes have you bought since the C19 pandemic started? | And compared to now, how often do you think you'll buy in these categories after C19?

Figure 9. VF Corp priorities moving forward: in a world where spending patterns decline overall, it points out what segments to target in order to maximize sell-through potential. Image by © TRIPTK, used with permission



HOW WILL C19 IMPACT A&F PURCHASE DRIVERS?

C19 is leading to a reappraisal of category drivers: prioritization of and new meaning for functional drivers

PROSUMER PURCHASE DRIVERS
NET IMPORTANCE POST-C19 (MORE - LESS IMPORTANT)

Driver	Net importance
Comfort	65%
Value for money	63%
Durability	62%
Designed for endurance / long lasting	61%
Has hygienic properties	61%
Sustainable materials	61%
Performance	60%
Protects me from the elements	60%
Sustainable brand	58%
Versatility	58%
Reflects my lifestyle and values	57%
Practicality	56%
Supports local business	54%
Ethical practices	52%
Style	52%
Joy it sparks	47%
Newness	45%
Trendiness	40%
A smaller, less mass brand	40%

Sources: TRIPTK Prosumer Survey | Q: To what extent are each of these important to you when buying clothing or footwear after C19?
WARC, Coronavirus: Global Change Accelerators

FUNCTIONAL DRIVERS RISE TO THE TOP

- ▲ **Comfort & durability** are more important than ever, and valued equally to **VFM**
- ▲ Emergent expectation of A&F that has **hygienic properties** and **protection from elements**
- ▲ **Sustainability of materials** is 4th globally (2nd in DE)
- ▼ Features like **trendiness** consistently drop to the bottom of the ranking (17th place or lower) across geos

COMFORT AND VFM TAKE NEW MEANING DURING SOCIAL, ECONOMIC AND MENTAL HEALTH CRISES

75% of global consumers stated "wearing comfortable clothes helps me feel better right now" as of April 2020

"Needs and behaviors will shift with each phase of reopening, but tapping into new consumer motivations and underlying yearning for normalcy will be central to capturing apparel sales along the uncertain road that lies ahead." MARIA RUGOLO, Industry Analyst, NPD Group

EXPERTS POINT TO CONTINUED IMPORTANCE OF STYLE AND ITS INTERSECTION WITH FUNCTIONAL CUES

Potential acceleration of functionality being in-style, as seen in pre-C19 athleisure and outdoor apparel trends

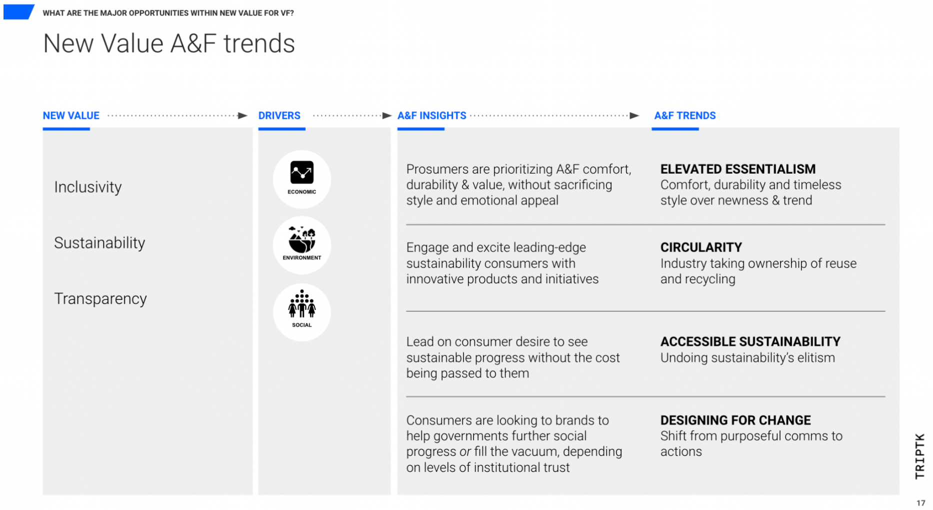
"While people will prioritize functional elements, they won't suddenly forget about style. It's been too deeply ingrained. Instead, we'll see the functional continue to become more in-style." DANIEL LANGER CEO Équité

TRIPTK

Figure 10. New Value A&F shopping drivers: what people look for when buying in the category. An important finding that surfaced here was that people were no longer trading off between form and function – they started expecting A&F that can deliver on both benefits.
Image by © TRIPTK, used with permission

Assemble Trends

Armed with clear answers to VF Corp's ingoing questions, TRIPTK went about assembling relevant trends for each of the foresight factors. Trends were developed as a result of combining survey data, cultural and contextual evidence, and social listening insights. Each trend was then supplemented by real-world examples already manifesting in the A&F category when the What's Next Desk deliverable was compiled.



WHAT ARE THE MAJOR OPPORTUNITIES WITHIN NEW VALUE FOR VF?

New Value A&F trends

A&F INSIGHTS	A&F TRENDS
Prosumers are prioritizing A&F comfort, durability & value, without sacrificing style and emotional appeal	**ELEVATED ESSENTIALISM** Comfort, durability and timeless style over newness & trend
Engage and excite leading-edge sustainability consumers with innovative products and initiatives	**CIRCULARITY** Industry taking ownership of reuse and recycling
Lead on consumer desire to see sustainable progress without the cost being passed to them	**ACCESSIBLE SUSTAINABILITY** Undoing sustainability's elitism
Consumers are looking to brands to help governments further social progress or fill the vacuum, depending on levels of institutional trust	**DESIGNING FOR CHANGE** Shift from purposeful comms to actions

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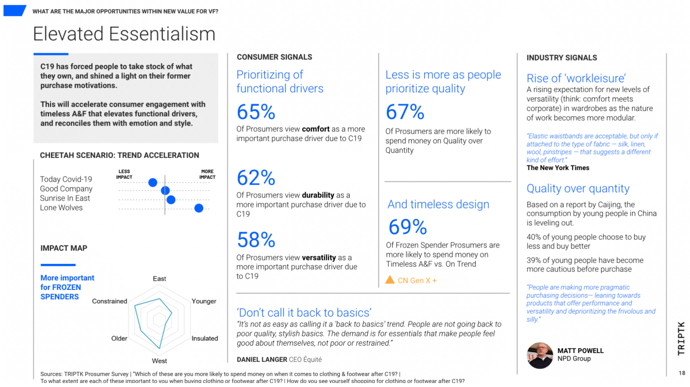
17

Figure 11. Each trend is anchored in collected evidence – honoring the strategic principle of delivering meaningful impact. Image by © TRIPTK, used with permission



WHAT ARE THE MAJOR OPPORTUNITIES WITHIN NEW VALUE FOR VF?

Elevated Essentialism

C19 has forced people to take stock of what they own, and shined a light on their former purchase motivations.

This will accelerate consumer engagement with timeless A&F that elevates functional drivers, and reconciles them with emotion and style.

CHEETAH SCENARIO: TREND ACCELERATION

IMPACT MAP

More important for FROZEN SPENDERS

CONSUMER SIGNALS

Prioritizing of functional drivers

65%

Of Prosumers view **comfort** as a more important purchase driver due to C19

62%

Of Prosumers view **durability** as a more important purchase driver due to C19

58%

Of Prosumers view **versatility** as a more important purchase driver due to C19

Less is more as people prioritize quality

67%

Of Prosumers are more likely to spend money on Quality over Quantity

And timeless design

69%

Of Frozen Spender Prosumers are more likely to spend money on Timeless A&F vs. On Trend

▲ CN Gen X +

'Don't call it back to basics'

"It's not as easy as calling it a 'back to basics' trend. People are not going back to poor quality, stylish basics. The demand is for essentials that make people feel good about themselves, not poor or restrained."

DANIEL LANGER CEO Équité

INDUSTRY SIGNALS

Rise of 'workleisure'

A rising expectation for new levels of versatility (think: comfort meets corporate) in wardrobes as the nature of work becomes more modular.

"Elastic waistbands are acceptable, but only if attached to the type of fabric — silk, linen, wool, pinstripes — that suggests a different kind of effort."
The New York Times

Quality over quantity

Based on a report by Caijing, the consumption by young people in China is leveling out.

40% of young people choose to buy less and buy better

39% of young people have become more cautious before purchase

"People are making more pragmatic purchasing decisions— leaning towards products that offer performance and versatility and deprioritizing the frivolous and silly."

MATT POWELL
NPD Group

Sources: TRIPTK Prosumer Survey | "Which of these are you more likely to spend money on when it comes to clothing & footwear after C19? | To what extent are each of these important to you when buying clothing or footwear after C19? | How do you see yourself shopping for clothing or footwear after C19?

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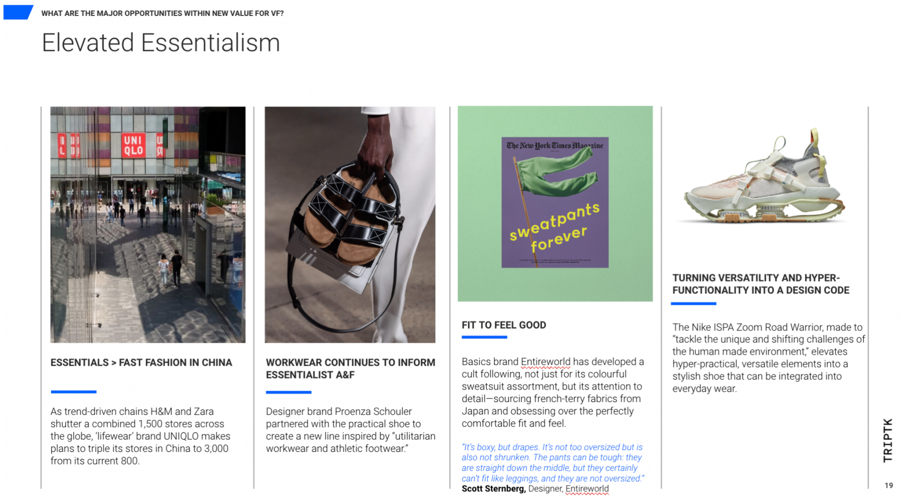
18

Figure 12. One of the 4 trends surfaced in New Value It includes an impact map which clarifies where and among what audiences the trend will have an outsized impact; consumer signals pulled from survey data and industry signals gleaned from expert interviews. Image by © TRIPTK, used with permission



WHAT ARE THE MAJOR OPPORTUNITIES WITHIN NEW VALUE FOR VF?

Elevated Essentialism

ESSENTIALS > FAST FASHION IN CHINA

As trend-driven chains H&M and Zara shutter a combined 1,500 stores across the globe, 'lifewear' brand UNIQLO makes plans to triple its stores in China to 3,000 from its current 800.

WORKWEAR CONTINUES TO INFORM ESSENTIALIST A&F

Designer brand Proenza Schouler partnered with the practical shoe to create a new line inspired by "utilitarian workwear and athletic footwear."

FIT TO FEEL GOOD

Basics brand Entireworld has developed a cult following, not just for its colourful sweatsuit assortment, but its attention to detail—sourcing french-terry fabrics from Japan and obsessing over the perfectly comfortable fit and feel.

"It's boxy, but drapes. It's not too oversized but is also not shrunken. The pants can be tough: they are straight down the middle, but they certainly can't fit like leggings, and they are not oversized."
Scott Sternberg, Designer, Entireworld

TURNING VERSATILITY AND HYPER-FUNCTIONALITY INTO A DESIGN CODE

The Nike ISPA Zoom Road Warrior, made to "tackle the unique and shifting challenges of the human made environment," elevates hyper-practical, versatile elements into a stylish shoe that can be integrated into everyday wear.

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19

Figure 13. Evidence of how this trend is already manifesting in culture, and especially in the A&F category. Image by © TRIPTK, used with permission

Develop No Regret Actions

Synthesizing the what, illuminating the why and developing a perspective on what's next (key drivers, key insights, trends) are essential components of strategy development, but they would be incomplete without illustrating the 'so what' and the 'what do we do about it now' – and in the case of the What's Next Desk – the 'what do we do about it next'.

Building on the shortlisted foresight intelligence TRIPTK collected, the team went about shaping implications and recommendations by developing no regret actions for VF Corp and each of its 4 priority brands (The North Face, Vans, Dickies, Timberland).

To develop these no regret actions, TRIPTK linked trends to opportunities in the Next: for each trend, TRIPTK charted an impact map illustrating what target groups VF was most likely to reach by taking action; and pointed out what VF Corp's current strength was in meeting needs and expectations pertinent to each trend (measured as high, medium or low strength).

For example: leaning into the Elevated Essentialism trend would require injecting key functional A&F purchase drivers with emotion and style cues that resonated with all spending groups. Doing so would resonate most in Western regions, among older age groups and especially among audiences with lower spending power.

Next, TRIPTK developed no regret actions along the temporal axis – focusing on marcomms and partnership recommendations in the 6-month timeframe, and informing retail and product decisions in the 18-month timeframe. Here are 2 examples:

- Marcomms: leaning into Elevated Essentialism opened up opportunities to champion the essentialist mindset in communications: for Vans, this meant finding ways to celebrate how their target audience, the Expressive Creator, makes the most out of the A&F they wear by creatively assembling outfits and styles in new and unexpected ways.
- Retail: another no regret action TRIPTK developed from the Elevated Essentialism trend pointed at the opportunity to invest in a less-is-more mentality: finding ways to keep exhausted A&F shoppers engaged by offering them a more curated selection of A&F products, even if it meant sacrificing seasonal product ranges to make custom releases and collections shine.

MAKING A GLOBAL BUSINESS RESILIENT TO THE DRAMATIC IMPACT OF COVID-19

Designing for impact

No matter how rich and robust a final project deliverable is, there's always a risk that it will remain just that – a report that is debriefed upon and that does not lead to changes in the way clients run their business.

In the case of the What's Next Desk, VF Corp was hankering for answers and strategic direction – because the dramatic impact of COVID-19 had predisposed the business to identify effective ways to implement change. That said, change rarely happens overnight, and there were a few ways TRIPTK and the core client team designed for successful project impact.

- We believe clients are partners, and act as extensions of their own teams: at TRIPTK, relationship building with more than a single project in mind is key. Leading up to the What's Next Desk, TRIPTK had already worked on brand projects across e.g. The North Face and Dickies, as well as on corporate project mandates. This long-term relationship thinking accelerates return on insight and project timelines, because the 'ways of working' wheel doesn't have to be reinvented every time
- We clearly defined roles and responsibilities upfront, identifying a core client team that was closest to the project and who could not only be our day-to-day contact but also help us navigate internal dynamics to develop the most effective socialization plan. This had to be a very senior team leader with extensive experience in the client organization
- We avoided black-box thinking/doing: the project remained highly collaborative throughout. Weekly status meetings were a regular moment for client and project

teams to come together, review weekly progress and steer forward by making key decisions along the way. This meant that at each stage of our methodology, there was room to shift focus, broaden or tighten the aperture as needed. For example, after our stakeholder interviews and the syndicated scan were completed and it was time to focus on expert interviews, TRIPTK compiled a document showcasing key hypotheses and hunting grounds, and reviewed them with clients to ensure the right focus areas were covered

- We made room for multiple debrief and strategy workshop sessions at the tail end of the project – realizing there's only so much new news a person can absorb at a time, we organized a few data download moments to thoroughly review and discuss drivers, insights and trends; to then dedicate a few sessions to our no-regret actions
- The nature of No-Regret Actions speaks to their impact potential – implementing them will certainly not hurt the business, and can only drive improvement.

Macro impact review

By applying the methodology and translating it into strategy, TRIPTK developed 9 Trends and 23 No Regret Actions (NRs) for VF Corp stakeholders to implement in the near (communication & partnership strategies) and long term (product & retail strategies) – spanning the 6 to 18 month timeframe dictated by the partnership's temporal challenge.

Of 23 NRs, 70% were implemented across VF Corp's portfolio and brands, directly contributing to an average revenue increase of 50% between Dec 2020 – Oct 2021.

Looking at revenue increase in more detail:

Table 8. VF Corp Revenue Change Data

Timeframe	Corporate Revenue Change	Brand Revenue Change
Q4 FY '21, ending in April '21	+23%	Vans: +13% The North Face: +28% Timberland: +25% Dickies: +22%
Q1 FY '22, ending in July '21	+104%	Vans: +110% The North Face: +93% Timberland: +70% Dickies: +61%
Q2 FY '22, ending in Oct '21	+23%	Vans: +7% The North Face: +31% Timberland: +26% Dickies: +21%

Detailed impact review

To unpack how VF Corp actions impacted revenue growth during this timeframe, it's helpful to examine examples of how select no regret actions were translated into marcomms, partnership and retail/product decisions by VF Corp team members. The below list illustrates a few examples.

Table 9. Examples of No-Regret Actions and VF decisions taken

No Regret Action	VF Decision	Source
Invest in a less-is-more mentality	Opening VF's first-ever multibrand store	Annual Report FY'21
Champion the essentialist mindset Innovate for access Partner with circularity pioneers	Timberland, The North Face launch circular initiatives	Fashion United UK Green Queen

CONCLUDING THOUGHTS

The What's Next Desk was a success in many ways – not only did it help drive confidence in VF Corp's decision making as we emerge from the global pandemic, but it also gave us at TRIPTK the opportunity to diversify our set of approaches to deep cultural immersion and foresight.

While the Desk in its VF Corp makeup was never repeated in other businesses, parts of it – and especially its underlying philosophy – are continuously applied in brand transformation initiatives throughout our studio. Specifically:

- The approach to foresight: combining the STEEPLE framework with signals of change / Prosumer research and strategic business priorities, helping us frame and deliver corporate strategy consulting projects that help our clients understand what culturally meaningful areas of growth are worth pursuing next to their core business
- The approach to data triangulation is nearly omni-present in TRIPTK projects, because it enables quick turnaround times and provides a sense of insight completeness – instead of relying on a single source of truth, it draws from multiple, different sources and drives objectivity
- The approach to strategy development: thinking through 'No-Regret Actions' as a means to arm a business with sensible steps to take and without expecting it to move mountains to reach goals, helps anchor deliverables in corporate and brand priorities, making them more realistic and achievable

Giulia Elisa Gasperi has over a decade of multi-disciplinary consulting experience. To her, numbers are powerful and empowering vessels of meaningful change. Leaders at VF Corp, Netflix and WeTransfer entrust her with turning intimidating data into fascinating stories, best-in-class innovations and white-space growth areas. She's lived on 4 continents, speaks 5 languages and is an incurable sneakerhead.

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Creating Resilient Research Findings

Using Ethnographic Methods to Combat Research Amnesia

KRISTEN L. GUTH, *Reddit, Inc.*

Product teams, including those I work with, struggle to connect the challenges observed in prior research to issues that endure in the field and market space. As a shortcut for efficiency gains, product partners rely on researchers to succinctly summarize deep insights, sometimes preferring reductive quantitative interpretations to enable a bias toward action in product development cycles. Challenges facing researchers in product development include maintaining the relevance of prior research, providing a way to make it evergreen and accessible, and building on it to deepen and expand an existing model of behavior. This case introduces the concept of Research Amnesia, which poses a threat to organizational resilience. Using core ethnographic methods, a strategic methodological approach is outlined to frameshift the value of existing research within a company to develop new insights, bring together disparate analyses and teams, and propel product partners forward by offering more questions as a means to answers.

Keywords: mixed-methods, organizational culture, resilience, strategy, research amnesia, Reddit

INTRODUCTION

During the past four decades of technology product development advances, competitive market dynamics have demanded that product teams navigate the delivery of high-quality, low-cost, differentiated products with increasing speed and flexibility (Takeuchi & Nonaka, 1986). With mantras like "move fast and break things" (Zuckerburg, 2012) in the background, product leaders and teams at software technology companies seek to make efficiency gains where possible to reduce costs, either materially or in time spent. The first step of the product strategy process is to identify and understand customer needs using existing research and it is sometimes overlooked in the effort to develop and deploy a competitive solution quickly. The public's increasing intolerance for consumer product innovations that ignore societal ramifications, and the paradigm shift away from minimum viable products to minimum virtuous products (Taneja, 2019), require that product development companies genuinely understand their target consumers and market niche.

Using previous user insights in a company's memory avoids 'reinventing the wheel' for product solution development as a viable alternative to what are considered slow, overly complex, and resource-heavy new user research projects. A challenge that product development teams sometimes experience is **Research Amnesia**, where team members forget user knowledge that has been developed or do not know how to apply insights across studies on a current topic facing the team. As Pollitt (2000) suggests,

> in the world of management, stress has been placed on innovation and change rather than stability and precedent, on creativity rather than experience, on envisioning the future rather than studying the past, on sound bites and keywords rather than full texts (p. 5-6).

With inherent complexities to deliver a successful product that departs from the norm, teams may prioritize other aspects of the product development process that privilege innovation rather than optimization and skip exploring or refreshing available user knowledge in the company.

Product launches can fail when they proceed without either drawing from existing research to support the product-market fit or conducting research to test the product concept iteration with consumers (Schneider & Hall, 2011). The impact of misunderstanding the user from knowledge already gleaned can equate to substantial missed revenue (Manning, 2016) and product failure (Schmidt, Lyytinen, Keil, & Cule, 2015; Dwivedi, Ravichandran, Williams, Miller, et al., 2013). For instance, there are several consumer technology products that support messaging. Meta developed Facebook Messenger and acquired WhatsApp, Apple developed iMessage, Salesforce acquired Slack, Tencent developed WeChat, and Microsoft developed Teams, and yet Google does not own a competitive product offering (CNBCTV18.com, 2022). During the past 17 years, however, Google launched and sunsetted a number of messaging applications, including Wave, YouTube Messages, Allo, Spaces, Talk, Hangout, Meebo, and Buzz (Amadeo, 2021; Ogden, 2022). Misunderstanding the users' needs, behaviors, or motivations can induce product failures. More granularly, on a product feature level, Meta's reversal of full-screen videos and images on the Instagram feed could be seen as a case of Research Amnesia. Instagram's substantiated value proposition with users is for social photo posts. The full-screen video changes to Instagram's feed were made in a wave of design modifications to reflect explicit knowledge around shifting user behavior toward watching video and to compete with TikTok (Newton, 2022; The Wall Street Journal, 2022). Adam Mosseri, Head of Instagram and trained designer, programmer, and product manager, stated: "For the new feed designs, people are frustrated and the usage data isn't great…I think that we need to take a big step back, regroup, and figure out how we want to move forward" (Newton, 2022). Launch failures can result from lack of evaluation research or forgetting existing research that reinforces a product's value to users. Consumer backlash and a product rollback may force a team to reinterpret signals around usage patterns in conversation with existing research.

Challenges that face researchers as partners in product development include maintaining the relevance of prior research, providing a way to make it evergreen and accessible, and building on it to deepen and expand an existing model of behavior. As a means to assist in preventing such catastrophic ends to the expensive undertaking of product development for hypergrowth organizations (Izosimov, 2008), this paper proposes a template of cost-effective, in-depth, and resilient research. A strategic mixed-method approach and report structure is outlined to frameshift the value of existing research to develop new insights without reducing depth, bring together disparate analyses and teams in service of product strategy, and propel multiple product partners forward by provoking curious inquiry to design successful products.

Product Development in Software Companies

In lean startup culture (Olsen, 2015), new product and business priorities emerge quickly and can fade the relevancy of data and stories from the product development mindset. Product managers have several factors and partners to consider when managing a team and timeline to launch a product. Product team communication with team members or partners, the pace of work needed to compete, and company structures all contribute to the context within which research investment, both in terms of time and money, is resourced.

Product development teams make trade-offs between user experience, technology capabilities, and the company's business goals to achieve success (Eriksson, 2016; Banfield, Eriksson, Walkingshaw, 2017). Within user experience, product managers collaborate with user researchers, data scientists, and designers to understand user needs and conceptualize solutions that provide value. Product managers work with individual contributors (ICs) and people managers across roles like software engineer, systems architect, quality assurance analyst, and program manager, to implement product requirements into code. The company's business goals as well as compliance with regulations require that product managers communicate across product marketing management, data analysts, finance, legal, and sales to launch a product or feature to the intended market. All in all, product managers make compromises with cross-functional partners across several expertise areas to successfully deliver a product or feature and contribute to a company's goals.

For social media companies, the pressure to be a pioneer and act on first-mover competitive advantage, and the requisite speed of product launches is intense (Going, 2017), though second-mover advantages include reduced costs due to lessons learned from others' mistakes (Shankar & Carpenter, 2013). The pace by which a product team might complete product milestones depends substantially on where a company is in its stage of growth, how well the team understands the user needs, the product strategy for solutions, and the velocity of its developers. Developer velocity is a metric for work done in agile software development (Rubin, 2013), measuring the speed of progress in a development cycle as a result of empowerment, an environment for innovation, and the removal of points of friction. Increased velocity is often a measure of success for a well-performing product development team, and according to a study by McKinsey, has an outsized impact on a company's profit margin (Srivastava, Trehan, Wagle, and Wang, 2020). Velocity tracking does not actually reflect efficiency or success, however, and solely represents the amount of work accomplished (Agile Alliance, n.d.). Developer velocity could increase as a result of additional people without improving the product outcomes or process efficiency.

A company's structure is critical to consider in tandem with the process of product development and consequent research resourcing. As Conway (1968) described, the structure of a product mirrors the communication and social boundaries of the people that produce them. A company's life cycle and evolution can be viewed in many ways, though the growth progression of organizational structures moves from startup to emerging to enterprise (Banfield, Eriksson, Walkingshaw, 2017; Wylonis, 2021). New companies require product development teams to adapt to a rapidly changing environment as the company matures from its founding to demonstrate traction with a viable product-market fit for its product. In an emerging company, product teams coalesce around scaling and coordinate as quickly as possible for growth, perhaps amidst a series of funding rounds and the expansion of teams. Established corporations offer a balanced environment of innovating new products and optimizing existing products to meet customer needs, sometimes acquiring other companies as the complexity of the company's structure accelerates. Technology products, similar to company structures, also rarely stay the same during a company's evolution. Features of technologies adapt or reify structures over time in response to the way that people use them together (DeSanctis & Poole, 1994). As a demonstration of Conway's law, product technologies shift as a company undergoes reorganizations. Within hypergrowth companies, constant structural changes create a complex environment for strategic research and its impact.

Organizational Memory as Change Agent

Organizations evolve by creating new knowledge (Chen & Edgington, 2005; Nonaka, Toyama, & Konmo, 2000; Rusaw, 2005), and organizations can learn by reflecting on memories of specific events and contexts (Rowlinson et al., 2010; Walsh & Ungson, 1991). Knowledge is a type of organizational memory (Rowlinson et al., 2010; Walsh & Ungson, 1991) and the result of amalgamating distinct data into useful information and insights through analysis (Tuomi, 1999). Knowledge can be explicit, which explains when, what, or how much and is easily quantified and recorded, or tacit, which explains how or why and is harder to quantify or record because it includes experiences, learning by doing, or personal beliefs (Anand, Manz, & Glick, 1998; Feldman & Feldman, 2006; Goh, 2002; Nonaka, 1994; Olivera, 2000). Organizational memory is shared understandings and beliefs (Tuomi, 1995) that are stored in individuals, culture, transformations, structures, ecology, and external archives (Walsh & Ungson, 1991). Product teams and software organizations can draw on product knowledge from memories of past research to face new challenges and facilitate learning (Coffey & Hoffman, 2003; Pollitt, 2000; Tuomi, 1995; Walsh & Ungson, 1991). Organizational amnesia, or the declining ability and willingness to make use of possibly relevant past experiences (Pollitt, 2000, p. 6), can inhibit a company's evolution. Pollitt (2000) outlines a range of four situational types for this forgetfulness: (1) significant data or decisions are not documented, (2) records are lost, (3) archives cannot be accessed quickly, and (4) records are available and accessible but no one thinks of using them, partly due to attitude or mentality against recourse to the past. Pollitt's four reasons assume good intent possibly because of his focus on the public sector. This paper builds on Pollitt's foundational situations for forgetfulness by adding another: (5) willful misdirection that conveniently obfuscates or overlooks past records for purposes of subterfuge.

Managers and producers of research within a company control how memory is recorded, disseminated, and used (Casey & Olivera, 2011). If memories are not effectively maintained, they will likely be lost (Pollitt, 2000) and the organization is unlikely to generate new knowledge (Bhardwaj & Monin, 2006; El Sawy, Gomes, & Gonzalez, 1986; Chinying Lang, 2001; Walsh & Ungson, 1991). Therefore, to progress toward its growth potential, it is a company's imperative and management's prerogative to build on existing knowledge in its memory. Though there is debate around whether a product manager should be framed as the CEO of a product (Horowitz, 2012; Eriksson, 2017), the product manager is centrally responsible for leading a product team through a product or feature's development. Product managers gather resources to identify the customer needs and larger business goals that a product or feature will fulfill, articulate a plan for success, and coordinate a team to realize that vision (Mansour, n.d.). People of several different expertise areas work together under the guidance of a product manager in technology companies to "discover a product that is valuable, usable and feasible" (Cagan, 2017). They are also the co-managers with researchers of prioritizing organizational memories, choosing between what might be applicable or not to the product development.

Product Development Knowledge. Product managers may choose to compromise on investments in decision-making when faced with the pressure of rapid delivery and the competing complexities of working across multiple groups to launch a product. Product teams may follow different paths of varying complexity through identifiable phases when aligning on the product strategy, including problem identification, solution development, and solution selection (Burnstein & Berbaum, 1983). Structures that impact product direction can be team members' understandings of the product problem, its scope, the approaches to make the best decision under the circumstances (i.e., decision logics), and external factors such as timing or resources (Poole, 2013; Poole, 1985; Poole & Doelger, 1986). The steps of deciding on product strategy as a team (Poole & Doelger, 1989) allow for multiple combinations and paths to be taken by groups in their decision-making to solve the problems they face (Poole & Roth, 1989). The role of the researcher in technology product development teams is essentially to retrieve or produce information to assist with decision making, including generatively around problem discovery or solution discovery, or evaluatively around solution selection. Within the frame of decision making models, researchers essentially perform but are not limited to the functions of problem analysis and evaluation to address customer needs and product solution guidance, elaboration, and evaluation. Product managers and researchers co-own the responsibility to incorporate research into product development knowledge, and researchers aid in surfacing relevant knowledge during the product development process for broader organizational learning.

Research Amnesia. **Research Amnesia** describes the behavior of fast-moving product teams that do not consistently remember research or revisit research, or are ill-equipped to apply the relevance of existing research in problem-solving efforts at a point sometime after the research was produced. An organization may not support infrastructure that perpetuates research, such as the technical service of a centralized knowledge base with clusters of information (Ackehurst & Polvere, 2020), the value of people supporting each other in a reference culture (Wilson, 1999), or even the practice of citing previous documents or artifacts. Teams may misremember or partially recall a finding from past research and move on with faulty assumptions. The sheer number of moving parts in the product development process pushes product teams to overlook or miss valuable learnings and common themes from previous research findings, and instead, new research is requested (see Figure 1). The outcome of Research Amnesia potentially threatens the resilience of the organization as a whole with the propagation of short-term thinking alongside an overcorrection into total innovation and a rejection of existing ideas or knowledge, rather than optimization and repurposing of existing insights. When teams operate with Research Amnesia, it represents an underlying confusion of product innovation with research innovation.

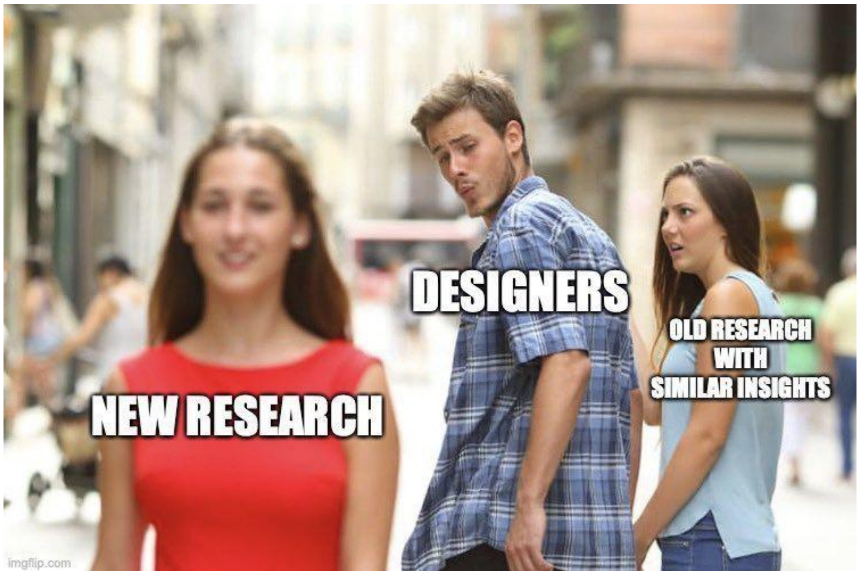

Figure 1. The Attractiveness of New Research vs. Old Research Meme (Hoang, 2021).
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In seeking to understand customer needs, teams and companies may face obstacles to generating knowledge from research in the organization's memory. Following Pollitt's (2000) four circumstances of memory loss, insights may not be documented and the team may not cull tacit knowledge of customers' experiences from more tenured team members (Alwis & Hartmann, 2008). Prior research on user experience could be unavailable or lost. The team may not have access to an efficient system or repository to transfer formal insights about user experiences (Pollitt, 2000). Fourth, the product team may not use available research because they perceive existing findings as irrelevant or inapplicable to the new context, or because they believe they already have the answer when they may have misremembered or partially remembered the findings.

For non-researchers on the team, prior research findings may also become fixed to a certain, outdated time and place that product objectives have moved past as the company focuses on several factors in scaling for the future (Barquin, Dreischmeier, Hertli, Köningsfeld, & Roth, 2020). Similarly, the common perception of software documentation as outdated among software engineers and product managers might have carry-over effects to other forms of documentation, like research. In one study, nearly 70 percent of participants agreed or somewhat agreed with the statement "Documentation is always outdated relative to the current state of a software system" (Lethbridge, Singer, & Forward, 2003, p. 36). The meaningfulness of user stories is unremembered or untranslatable to new contexts. Teams struggle to connect challenges that surfaced in prior research to the current context and these insights are viewed as inapplicable.

Another pernicious influence working against the use of available research, and a fifth situation of forgetfulness introduced in this paper, may be the researcher themselves occluding information for a perceived research opportunity. For instance, if a researcher discovers an existing set of findings that thoroughly answer the research questions for the team, their duty to cite the findings for team progress may conflict with their desire to carry out their planned study for a variety of reasons, including method skill attainment, visibility, career progression, travel, or other outcomes of self-interest. Superfluous citation manipulation as a practice has been well documented (Fong & Wilhite, 2017). Less explored are the murky ethics of omitted citations (Penders, 2018) as deceit along the way to achieving a goal. In environments that foster Research Amnesia, and where researchers alone are the purveyors of insights, the control of information may create opportunities too tempting to resist the pursuit of personal gain, deviating from the team's outcomes. In the information flows typified in Table 1 by the Luft and Ingham's Johari window (1955) and an organizational analysis of facts and risks in Table 2 presented by Rumsfeld (US Department of Defense, 2002; Krogerus & Tschäppeler, 2018), a researcher may project a façade of "unknown knowns" and create research questions to support their goals, when in reality, the team could progress with an arena of open knowledge or "known knowns."

Table 1. The Johari Window: Types of information flows in relationship to the self and others.

	Known to self	*Not known to self*
Known to others	Open	Blindspot
Not known to others	Façade/ Hidden	Unknown

Table 2. The Rumsfeld Matrix: Analysis of facts and risks in organizations.

	Known	*Unknown*
Known	**Known-Knowns/** Facts and Requirements: things we are aware of and understand	**Known-Unknowns/** Known Risks: things we are aware of but don't understand
Unknown	**Unknown-Knowns/** Hidden Facts: things we understand but are not aware of	**Unknown-Unknowns/** Unknown Risks: Things we are neither aware of nor understand

On the rare occasion that past research is remembered accurately by product development teams, quick translations via reductive, quantitative interpretations are preferred to extrapolate previous findings to their new context and motivate swift action. Quick translations to new contexts create opportunities for further muddling and misremembering of research later. Regarding Research Amnesia, researchers face challenges such as maintaining the relevance and depth of prior research, producing research that remains evergreen and accessible, and the effort of building on prior research to deepen and expand models of behavior. The following case provides an illustration of one approach at Reddit known as The Book of Insights project that documented analyses and provided a narrative of understanding, brought together records that might have been lost, made those analyses accessible to all, and socialized the new tools to heighten the value of past findings for future action in the hands of our partners.

RESEARCH APPROACH

Reddit, an emerging social media company, experienced hypergrowth in 2020. The company needed a way to document analyses and highlight the rush of insights produced by multiple teams, and a way to place these findings in dialogue with each other to generate knowledge and advance the organization's evolution. At the time, Reddit had a number of groups and independent contributors across the company generating analyses without coordination, sometimes repeating the same questions. Some of these groups included Advertising Products, Communications, Community, Data, Design, Marketing, Product, Safety, and User Research teams. Without the ability to access insights across groups, significant findings were forgotten by the organization. Results were trapped behind team-specific documentation processes, not written down, not vetted to a standard degree of execution, and rarely did product teams chase down the findings, leading to an increasingly alarming trend of product teams not utilizing the findings. Additionally, some teams were convinced the older findings did not coherently translate to the current context they worked in, and the analyses were overlooked.

Under the banner of The Book of Insights, a research team of three – a product management intern, an early career user researcher, and a senior manager of user research (the author) – was established. The mission of the team was to iterate on the existing idea of The Book of Insights, which in the previous three versions had selectively gathered a few research studies and was led by a central product manager. The expectation from the Executive sponsor of this project, a new version of The Book of Insights led by User Research, was for an expansive and comprehensive summary of insights from 23 teams across the company featuring takeaways. As a company of 500 employees doubling in size, Reddit demonstrated Pollitt's (2000) four situations of forgetfulness, including a lack of documentation, lost records, inaccessible archives, and an attitude preferring fresh insights over evergreen insights. When we began the project, we were not yet sure that subterfuge played a role in obfuscated archives. The intended outcome of The Book of Insights was to reduce the chance of Research Amnesia at Reddit and herald evidence-based product decisions that evolved rather than reinvented the wheel. The Book of Insights set out to accomplish four goals:

1. Bring insights from analyses across the company that all employees can use to make informed decisions.
2. Create a centralized repository of research completed between February 2020 through June 2020 across several teams producing insights.
3. Identify insights from multiple sources, including analyses, academic publications, logged data, news articles, survey data, and interview data.
4. Create a thematic analysis of all reports and identify emergent insights.
5.

We collected and reviewed 123 analyses across five months from 57 internal authors and synthesized their analyses into eight major insights with associated artifacts and "how might we?" questions for teams. The Book of Insights used a combination of five data gathering methods in phases, including archival data collection, a survey questionnaire, open-ended interviews, a literature review, and logged data analysis. Our assessment of insights was determined through archival sources analyses, academic publications, logged data, news articles, survey data, and interview data (see Table 3). A qualitative thematic analysis was performed to produce emergent themes and categories of insights (Saldana, 2014). Corresponding original sources were compiled into a newly established knowledge repository.

Table 3. Mixed-methods approaches for collecting and aggregating diverse insights across Reddit for product strategy research in The Book of Insights.

Research Approach	Goal	Impact
Archival research	Collect analyses completed between late 2019 through June 2020 across teams, including Advertising Products, Communications, Community, Data, Design, Marketing, Product, Safety, and User Research teams.	The Resource Matrix, a comprehensive and centralized repository of previous research and knowledge management source for the entire Reddit organization, provided a source of truth to find previous research.
Survey	Efficiently collect information on analyses gathered in standardized documentation that asked about the impact, value, and relevance of findings and supported shared ownership of accuracy.	Identification of prior work most valuable for making decisions.

In-depth interviews	Interviews were scheduled at the request of employees who had either produced multiple reports or otherwise made the request in lieu of the survey. For those employees with multiple analyses, an in-depth interview format provided the opportunity to seek depth across the various analyses they had produced.	Deepened the insights for identifying more valuable research, and reaffirmed the context of previous work.
Literature review	Academic publications that mapped to insight categories were condensed into academic insights and rephrased into the narrative.	Increased credibility of research insights by grounding the takeaways in the science of human behavior, needs, and motivations.
Logged data	Logged data was pulled from telemetry to contextualize the insights and highlight the growth Reddit had experienced between the first half of 2019 and the first half 2020.	Aligned teams on relevant outcome metrics and provided a frame for qualitative insights in relationship to quantitative data.

Phase I: Archival Data

First, we began by gathering analyses produced by partners across the company from February 2020 when the previous volume was published through the end of June 2020. In exploring the analyses, we realized that there were relevant analyses prior to that timeframe that had not been captured in other volumes. Consequently, our selection criteria expanded to be inclusive of analyses released from late 2019 forward. We searched for and collected analyses within the following 11 internal company sources, such as reports from the Experiments forum, the Consumer Product organization, the Design organization, and the Community Initiatives team; a Safety database; the User Research shared folder; internal subreddits for the User Research team, the Analytics team, and Reddit; emails; internal chat posts, and other miscellaneous resources.

Following archival data collection, we conducted an initial round of analysis of these digital artifacts (Boellstorff, Nardi, Pearce, & Taylor, 2012; Ladner, 2014). We performed a qualitative grounded thematic analysis and used the constant comparative technique to categorize the findings and create themes of insights. We initially grouped linked analyses with notes under initial themes by product area (e.g., Search), product feature (e.g., push notifications), role (e.g., Moderators), or event (e.g., the COVID-19 pandemic).

Phase II: Survey Data

As a means of facilitating further data collection, we sent a survey to nine cross-functional teams across the company, including Ads Product, Comms, Community, Data, Design, Marketing, Product, Safety, and User Research, for a few reasons:

1. Efficiency: Lots of partners created analyses—we were collecting information on the initial analyses gathered, a total of 69 reports by 29 employees.
2. Standardized documentation: Analyses varied in depth and explanation.
3. To ask partners about impact, value, and relevance: These takeaways were sometimes excluded in the analyses, given their original purpose.
4. Supporting accuracy: A survey provided partners the opportunity to voice directly the contextual meaningfulness of their analyses.

The survey asked for the name of the respondent, a link to the analysis, and ten questions (see Table 4). We encouraged partners to copy analysis report information into the survey item text fields as a shortcut, and also to confirm the analyses' findings. The survey was sent to 29 employees who had created 69 analyses that were found during the initial archival data phase and warranted more information to effectively interpret the reports. We received survey responses from 18 employees regarding 26 analyses from across the company, amounting to an initial 62% response rate and a 38% collection rate. During ensuing conversations with employees, we also discovered several more existing analyses in the initial round of survey recruitment and distributed subsequent surveys beyond the initial 29 employees to capture additional data.

Phase III: In-Depth Interview Data

Given the launch of a new method of information collection for The Book of Insights, and an initial low collection rate, we adapted our methodology to include a round of interviews. Interviews were scheduled at the request of employees who wanted a conversation in lieu of completing the survey, which could have been willful obfuscation of previous archives, though our aim was the collection of information rather than assessment of intents in refusing the survey. We also initiated scheduling interviews with employees who had produced multiple reports because the format provided the opportunity to seek depth across the various analyses they had produced. To standardize the analysis of Reddit-wide insights, a truncated version of the survey items was represented in a questionnaire with only six items. Nine interviews were conducted with employees across the nine teams, including Data, Product, Community, Safety, International, and Marketing, and 54 additional analyses were reviewed in total. Interviews were recorded and discussion notes were taken to clarify points of data and interpretation and used in the later thematic analysis as reference.

Table 4: Data Collection Questions in Reddit's Book of Insights Survey and In-depth Interview

Survey Questions	In-Depth Interview Questions
1. What were the key insights from the analysis? 2. What prompted this analysis? 3. Who did you work with and which teams were involved? 4. How did your analysis affect the product? 5. How did your analysis impact your team and others you work with? 6. How did your analysis help Reddit users? 7. How do you think recent events (e.g. COVID-19, Black Lives Matter) interact with this analysis, if at all? 8. If you could go back, what's one thing you would have liked to change about the analysis? 9. What can other teams do to help push your analysis even further? 10. What is one thing you'd like the rest of Reddit to remember about this project?	1. What were the key insights from the analysis? 2. What prompted this analysis? 3. How did your analysis help Reddit users? 4. How do you think recent events (e.g. COVID-19, Black Lives Matter) interact with this analysis, if at all? 5. What is one thing you'd like the rest of Reddit to remember about this project? 6. What are some findings you want to delve deeper into, given the insights that this analysis gave?

After the survey responses and in-depth interviews were complete, we added several more rounds of analysis by incorporating extensive notes and details and began to write. We created accompanying documents with relevant meeting notes, survey responses, and summaries. The team combed through the gathered details and sought to concisely summarize each analysis' artifacts. We conducted qualitative thematic coding, examining nuances in the report findings, refining categories, and crafting a more cohesive narrative that brought together distinct insights across different teams (Saldana, 2021). We reexamined the placement of analyses within initial themes, repositioning and creating new, emergent themes along the way.

The new themes aimed to synthesize company business unit functions and areas around a user-experience focus, and better represent insights for Reddit as a whole. Insights such as, "great products are often inspired by users, not requested by them" and "the business and the users move together" were used to frame large bodies of research insights. As a knowledge piece of organizational memory, the framework employed to shape The Book of

Insights was crucial to develop. I wrote our headline insights by juxtaposing the themes to values that drive newsworthiness in journalism (Walsh, 2017), contextualizing their merit against timeliness of current events, proximity to company values, impact to users, unexpectedness, relevance to company strategy, and conflict of perspectives. We affinitized research findings around common themes that supported the company's direction, emphasizing insights in alignment with company values, and providing multiple groups visibility in the top insights. The first draft of The Book of Insights was complete (see Figure 2).

Phase IV: Literature Review

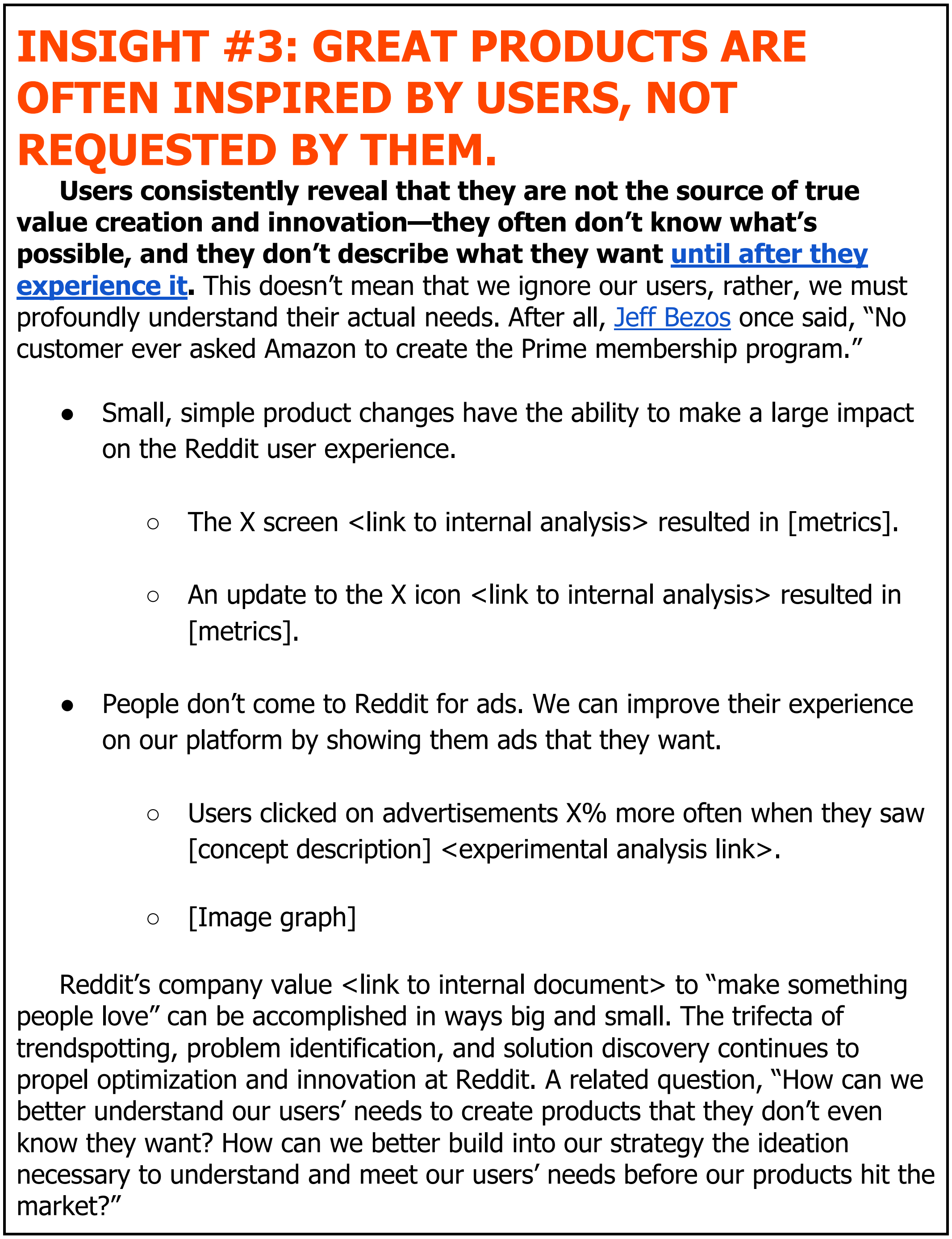
User Research summarized daily and shared externally-produced academic publications on internal research chat posts to the company about product considerations to assist in driving evidence-based product development. Academic publications related to Reddit, Reddit-related product offerings, and user attitudes and behaviors were distributed with a link to their PDFs on an internal cloud-based drive. We integrated academic insights into The Book of Insights by:

- Identifying academic publications that mapped to insight categories
- Reviewing publications and drafting condensed academic insights
- Rephrasing insights into the Reddit insights narrative

The academic insights process was iterative as The Book of Insights draft evolved over time. All academic papers referenced in The Book of Insights are available through the User Research library, a company-wide resource that was updated on a weekly basis.

Phase V: Logged Data

In an effort to contextualize the insights showcased in The Book of Insights, and highlight the growth Reddit had experienced between the first half of 2019 and the first half of 2020 (i.e., January through June each year) and to coincide with the date range of analyses included in The Book of Insights, logged data was collected from eight teams and their dashboards. The goal of using logged data to begin The Book of Insights was to introduce new metrics of growth and demonstrate the relevance of the insights to these product areas. Previously, these growth metrics had not been brought together in one place, and gathering them together helped to emphasize the potential impact and relevance of the findings to business objectives for product managers. Each team was asked for a topline descriptive statistic relevant to their product area, and a corresponding data dashboard that could be accessed by all employees. The consolidated logged data snapshot included user-centric (e.g., the number of average daily active users or commenters) and activity-centric statistics (e.g., the number of posts or searches made). For each of these fields, we calculated the year-over-year (YoY) percentage increase seen between 2019 and 2020. Logged data anchored The Book of Insights in the magnitude of growth that Reddit has supported across a spectrum of initiatives and products.



INSIGHT #3: GREAT PRODUCTS ARE OFTEN INSPIRED BY USERS, NOT REQUESTED BY THEM.

Users consistently reveal that they are not the source of true value creation and innovation—they often don’t know what’s possible, and they don’t describe what they want until after they experience it. This doesn’t mean that we ignore our users, rather, we must profoundly understand their actual needs. After all, Jeff Bezos once said, “No customer ever asked Amazon to create the Prime membership program.”

- Small, simple product changes have the ability to make a large impact on the Reddit user experience.
    - The X screen <link to internal analysis> resulted in [metrics].
    - An update to the X icon <link to internal analysis> resulted in [metrics].
- People don’t come to Reddit for ads. We can improve their experience on our platform by showing them ads that they want.
    - Users clicked on advertisements X% more often when they saw [concept description] <experimental analysis link>.
    - [Image graph]

Reddit’s company value <link to internal document> to “make something people love” can be accomplished in ways big and small. The trifecta of trendspotting, problem identification, and solution discovery continues to propel optimization and innovation at Reddit. A related question, “How can we better understand our users’ needs to create products that they don’t even know they want? How can we better build into our strategy the ideation necessary to understand and meet our users’ needs before our products hit the market?”

Figure 2. Example insight from The Book of Insights. © Reddit, used with permission.

To finish our analysis and additions to the report, we added the academic insights to the narrative already crafted, referenced the insights from previous volumes of The Book of Insights, and outlined the topline product area statistics. Through iterative analysis, we created four drafts of The Book of Insights before arriving at the final draft. In the drafting process, we met with product leadership and shared in-progress work. Feedback was incorporated into the intermediate drafts, along with accompanying recategorizations and refining of the larger narrative.

BUSINESS IMPACT

The new version of The Book of Insights changed the way that the Reddit departments producing analyses worked together to retain knowledge. We presented on The Book of Insights, posted the artifacts in announcements on our internal company subreddit, an email, and a chat system, and provided links to the report documents, the repository, the presentation slides, and the presentation recording. Product became more vested in understanding patterns of findings across research studies and seeking out multiple methods to validate assumptions about user needs or behaviors themselves. Rather than forgetting what research had come before, product teams had two resources that helped re-circulate and build on existing research at Reddit. The Book of Insights Vol. 4 shed light on an extended discussion of eight key insights supported by a variety of data sources and built a model for the next volume. A few insights were commonplace by product development standards but were responsible for radically shifting the product development mindset at the company.

The Resource Matrix, as an ongoing repository of analyses at the company, provided an evergreen resource. The Resource Matrix is a comprehensive and centralized knowledge management source for the entire Reddit organization. The Resource Matrix sheet is a sortable, exportable database that can be referenced in future versions of The Book of Insights. The Resource Matrix brings together valuable analyses in one accessible place to empower decision-making and conversation with partners across the company. The Resource Matrix itself identifies and consolidates links to internal analyses, academic publications, news articles, and internal team hubs across all four volumes of Books of Insights. Internal analyses and academic publications tabs provide the following information fields for each entry:

- Date distributed or published
- Title
- Team or journal/publication
- Owner or author
- Book of Insights volume
- Insight number
- Insight [text]
- Link

Analyses reviewed for future Books of Insights will be included in the Resource Matrix or its next iteration as part of maintaining this consolidated source of company-wide insights and knowledge.

For the first time within Reddit, research across the company was brought together in a cohesive and understandable way via ethnographic methodology. Product partners referenced the eight larger insights with supporting evidence to develop product roadmap strategies. Conversations began among teams about the company's current state, its trajectory, and users in this journey, improving organizational resiliency during a time of remote, distributed work-from-home culture.

Reflection

Upon reflection, the two months of work undertaken to produce these insights posed some challenges. First, there was no direct, centralized way to access information produced by different teams at the company. Teams that produce analyses prefer different methods of storing and sharing outputs, do not have a normalization of unprompted sharing of information between teams beyond formalized settings, and use different places and tools to store information, which creates implications for access control. These pose central challenges to the relevance of research and organizational resiliency to solve problems and move on from them. The company benefited from a central resource of insights, though its ongoing maintenance required further investment and helped to usher in the establishment of Research Operations at Reddit.

A persistent myth that should be addressed directly is the fantasy of the research repository – or the naïve idea that a centralized resource to retrieve reports and analyses will solve all organizational knowledge problems, provide an easily discernable roster on what is known or not known, and serve as an endless source for an organization to draw from to propel its own evolution. Overall, the question of whether a research repository like the Resource Matrix is a wise investment depends on who will use it and how it will be used. Occasionally research leaders determine little value in establishing a research repository because teams default to asking research colleagues to function as librarians, retrieving findings for them as a shortcut rather than searching for information in a repository themselves. The Resource Matrix has been useful as a catalog repository for researchers, and it has aided in the ability to cite across projects and advance teams past basic product questions. The centralized repository has assisted the researchers at Reddit in staving off Research Amnesia and in their roles as partners to keep the organization evolving and learning. A research repository on its own will not save an organization from Research Amnesia. Implementing a repository at an organization is as much about introducing a new tool as it is about establishing boundaries, expectations, and roles and investing in cultural change around the process of using research effectively. Similar to any system built for success, a research repository must have early champions and quick wins to illustrate the larger, long-term value in its vision. Partners must understand and feel confident enough to self-service retrieval of information, comprehend what they discover, and then enact critical thinking to enable application and propel action.

The second challenge arose when many partners who created analyses realized the obstacles around communicating meaningfulness and impact in their own analyses as we attempted to collect and understand them. Devoid of context, the gravity of particular analyses and their contributions to the company outcomes or goals could be overlooked. The executive sponsor of The Book of Insights team asked us to provide feedback to other teams about how to structure their individual reports to enable faster and deeper insights going forward.

The final challenge came about during the process itself: The Book of Insights requires a substantial amount of work in partnership negotiation as well as research analysis. Establishing a serial Book of Insights program with multiple volumes on a cadence that adds value to the company to guide product development strategy can drain the energy of the researchers for other projects. The synthesis task can overwhelm researchers, but its cost in effort should be balanced with its ability to provide thought leadership without costly research investments in new data collection.

Although this case prioritizes impact on the product development teams, The Book of Insights fostered other teams' use of the findings and takeaways for other goals that Reddit pursued, including some in Communications (such as the Year in Review publication), Marketing, Sales, and other departments. In terms of impact, one product director commented,

> You all crushed it! I was very proud of the team. The reception from the company was fantastic, and it was wonderful to see so many enthusiastic questions. Let me know how I can be supportive of this effort in the future.

As a team, we were excited to learn that the success of the project also supported the conversion of one of our teammates from an intern to a full-time employee position at the company. By distributing the documents in an accessible repository, presenting the findings, and empowering partners to ask questions, The Book of Insights project elevated the entire research team enterprise as a powerful voice for interpreting findings across the company into guidance for product and business strategy.

CONCLUSION

The Book of Insights case provides a template for preserving and documenting findings from multiple analyses produced across Reddit. This paper outlines the context of product development in hypergrowth tech companies and the challenges faced by product teams and researchers in these contexts. Research Amnesia sets in and teams forget or believe previous research does not apply to contexts facing the product team. Companies undergoing change may exhibit forgetfulness around research due to a lack of documentation around data or decisions, missing records, archives that cannot be accessed, or simply not thinking to use artifacts from the past (Pollitt, 2000), or as this paper contributes, subterfuge for reasons of opportunistic gain. With limited time to allocate during product development, partners seek time-saving shortcuts to bypass deeper investments required for strategic research. Commonly perceived time-saving shortcuts in research include quantitative summaries of existing, rich qualitative research; new research on a timeline that affords immediate tactical value rather than necessary strategic depth; nonexperts undertaking basic research (Takeuchi & Nonaka, 1986), which has most recently been coined as research democratization (Pernice, 2022); or reliance on anecdata (i.e., anecdotal evidence) in lieu of research altogether. The gains in a product development timeline from neglecting existing research perhaps allows for a quicker iteration of solutions and launch of a novel product to market, or an increase in the number of products launched, often a marker of success. To prevent Research Amnesia, The Book of Insights documented analyses and provided a narrative of understanding; the Resource Matrix collated records that might have been lost and made them accessible to all; and the process of presenting and socializing The Book of Insights and Resource Matrix changed the way partners understood the value of past findings for future action and reduced the potential for willful misdirection. Research Amnesia is a common problem among organizations of all types, and The Book of Insights project provides one approach to fighting the inner voice who says upon hearing a new challenge, "we don't know anything" to moving to explore what we do know and confidently move beyond starting at square one.

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NOTES

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Cybersecurity in the Icelandic Multiverse

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> "Security in cyber space should be one of the main cornerstones of economic prosperity in Iceland, resting on a foundation of sophisticated awareness of security issues and legislation."
>
> —Icelandic National Cyber Security Strategy

Iceland makes a unique case study for cybersecurity in that it ranks among the world's most connected nations as well as among the highest for social trust. Data that elsewhere is considered sensitive is shared freely by individuals and businesses. As a result, technology built in places with different cybersecurity paradigms may not function as intended in an Icelandic context. This work, undertaken with undergraduate and graduate students from the University of Iceland's Computer Science department, employed ethnographic methods in a classroom setting to build cybersecurity awareness with a special emphasis on culture and to engage the broader community in conversations about security from local perspectives. This work lends itself well to multinational enterprise settings, where systems may be built with the expectation of security behaviors that do not actually reflect local or regional norms. Of special interest to the EPIC community may also be this case study's exploration of ethnography as a defensive grassroots tool in cyberwarfare. In the so-called "wild west" of cybercrime where so often those with the most resources and imperialist drive win the day, we suggest that ethnographic skills are an undertapped resource that communities can employ in active striving for resilience.

Keywords: cybersecurity, cyberwarfare, ethnography, anticipatory ethnography, futures thinking, storytelling

BACKGROUND

"Þetta reddast," widely regarded as the national slogan of Iceland, roughly translates to, "it'll all work out just fine." A 2017 report by Oxford University (Bada and Weisser 2017), commissioned by the Icelandic government, noted that this trust that "it will all work out" could make government initiatives surprisingly effective in Iceland—and at the same time opened up the country to acute security risks. A prevailing belief that attackers will ignore Icelandic targets is common in industry and is reflected in the lack of security positions available. All of this is compounded by the fact that for much of Iceland's history, national defense has been provided by other nation states and geographic isolation has rendered most threats relatively harmless. The shared memory of a generations-long peacetime is strong.

What happens then, when one of the world's most trusting nation states (Vilhelmsdóttir 2020) is also one of the most connected? In addition to ranking among the most trusting countries in the world, Iceland is also one of the highest in terms of internet saturation, with 99% of businesses and individuals online (BBC News, 2018).

Such connectedness marks a significant change for this country with no geographic neighbors. As Milton Mueller notes in his "Will the Internet Fragment?: Sovereignty, Globalization and Cyberspace," the internet that we know today, with its roots in Web 1.0 idealism, was architected to fundamentally ignore nation state boundaries (Mueller, 2017). The result is deep layers of mutual access between geographic regions that may not have been connected before. And while the connection goes both ways, it is rarely true that both parties are equal in terms of resources, computing power, cyber skill, and willingness to attack. What this means for Iceland is that its "digital borders" are far more permeable than its geographic borders have historically been. In other words, the ocean isn't enough to keep other nation states out anymore.

Although the above premise was a major driver in the case study presented here, it was thrown into high relief in March, 2022, with the invasion of Kiev, Ukraine, through a mixture of on-the-ground and cyber attacks. As Russian forces hinted at further-reaching cyberwarfare against Ukrainian allies, the security posture of NATO's smallest and most undefended state was urgently felt. This is discussed in more detail in the "Reflections" section of this paper.

This project took the form of a semester course in the University of Iceland's Computer Science department, attended by undergraduate and graduate students hailing from a variety of fields. The work was sponsored by the Icelandic Fulbright Commission as part of a National Science Foundation Fulbright grant in Critical Cyberinfrastructure. It was inspired in part by the work of the previous year's grant recipient, whose students connected local disinterest in cybersecurity with the concept of "þetta reddast" (echoing the 2017 Oxford report). This work began with a hypothesis that ethnographic methodologies could contribute to a more robust Icelandic cybersecurity posture by: building up a general awareness of cybersecurity, by focusing the entire topic on the students' home turf and the sites of their everyday lives and work, and by focusing on local, emic storytelling of cybersecurity realities to inform the secure management and consumption of data.

PROJECT OVERVIEW

Initial Context-Setting

The germination of this project began during my work leading design research for IBM Pervasive Encryption for the z14 mainframe, where my team saw firsthand how profoundly human cybersecurity can be. Spending time with clients across the world in the sites where they worked, we encountered a range of ways security incidents were anticipated or escalated, saw critical information conveyed through informal modes like stories or humor, and experienced the impacts of regional norms on overall cybersecurity expectations and how a product was actually used.

This work is in conversation with others at the quietly bustling intersection of cybersecurity and ethnography. Susan Squires and Molly Shade's 2015 EPIC case study, asking: "People, the Weak Link in Cyber-security: Can Ethnography Bridge the Gap?" is one especially resonant example; in the accompanying article, the authors note that "users and their actions do not exist in a vacuum, and their perceptions and subsequent behaviors regarding security risk are shaped by a vast array of beliefs, social relations and workplace practices." (Squires and Shade, 2015) Much has been explored regarding the way privacy threats are recognized and defended against by communities, and these echo our lens here of communities-as-actors within a security landscape. (Ahmad, et al., 2022; Cordio, et al., 2012; Dourish and Anderson, 2006) Laura McNamara, working with Los Alamos and Sandia National Laboratories in the United States, has also extensively studied the impact of geopolitical shifts on security posture and in-house security knowledge (McNamara, 2016), which is relevant to our examination of resilience amid shifting international cyber threats.

Methodologically, there are a wealth of resources (within EPIC and otherwise) exploring how ethnographic fieldwork can complement speculative fiction, futures design, and the creation of science-fictional artifacts as a mode of storytelling (Anderson and McGonigal, 2004; Attari et al, 2021; Cuciurean-Zapan, 2017; Greenmail and Smith, 2006). Underlying these we find the anticipatory anthropology work of Robert Textor and collaborators such as Margaret Mead (Textor 1995; Mead and Textor, 2005).

The "Cybersecurity Capacity Review for the Republic of Iceland" assembled by the Global Cyber Security Capacity Centre at the University of Oxford and described above (Bada and Weisser 2017), provided important background on the cybersecurity landscape of Iceland. For additional context, conversations with both Dr. Matthias Book, department head of Computer Science at the University of Iceland, and with the previous recipient of the NSF-Fulbright grant, Dr. Gregory Falco (Johns Hopkins University), were invaluable.

Dr. Falco's findings have been covered in a publicly-available presentation that can be found (as of September 2022) on the Fulbright Iceland YouTube channel (Falco, 2021). Key points from that work can be summed up as follows:

- Iceland's high level of social trust has had many positive effects but also can result in a more compromised cybersecurity position
- Actual cyberattacks that do affect national infrastructure tend to be underreported in the Icelandic press, further contributing to the low public awareness of cyber risk
- Young technologists who are interested in growing their skills in this area do not have a lot of outlets, whether at the university or in employment after graduation (this is tied to the belief of many organizations that "we do not have security problems")

At present, Iceland's version of the national identification number, the *kennitala*, is publicly available on a national database along with identifying information such as address, phone number, and birthdate. Although identity theft in Iceland is rare, exploiting these public databases is not difficult. In one recording made by Dr. Falco's class, a student called one of Iceland's largest telecom companies using the kennitala of a Laki Power employee, and was able to obtain critical private information quickly and without any apparent issue.

Dr. Falco also notes in his presentation that a significant number of his students "had never heard of security before" taking the course, as there are few opportunities to do so, and that low cybersecurity awareness in industry could translate to fewer opportunities for the students to grow those skills as they go on to become the builders and maintainers of the country's technological infrastructure (Falco, 2021).

The follow-on course described in this paper, titled "Ethnographic Approaches to Cybersecurity," was informed by Dr. Falco's experience, by the aforementioned 2017 report, and other supporting research. It was not sufficient to teach the students new cybersecurity skills; they needed to be able to tell a compelling story within their communities to justify their interest and any further work they might do. It was also important that these perspectives be defined by local realities: what holds true for cybersecurity in Silicon Valley, where social trust is comparably lower and information such as passwords and national identity numbers are assumed secrets, may not function as intended in an Icelandic context. Security solutions that would genuinely protect the community should ideally be built with the community's perspectives, values, and practices in mind.

The underlying question at this stage was: could ethnography be used to help Icelandic technologists tell their own, locally-informed stories about security, as opposed to having those stories told to them? And could those stories engage the community in broader cybersecurity conversations?

The goal of this project was to take the previous grantee's class and compare the students' security awareness after technological coursework to a curriculum centered on ethnographic approaches. Success, in this case, would be the students defining in their own words what security could look like in Iceland in the future, in the places that were most meaningful to them. Achieving a level of community engagement was also a secondary goal of the project. Therefore, success would be measured by the content of the final class projects (which would center on that community-oriented storytelling), as well as through benchmark surveys before, during, and after the course to gauge/track learning.

The course was designed in three parts:

1. Establishing a shared vocabulary
2. Fieldwork
3. Storytelling

Course content was subject to iteration as feedback was received from the students (discussed below), but maintained its core structure throughout the semester.

Establishing a Shared Vocabulary

As described above, the previous grantee found that students did not tend to have a strong knowledge of cybersecurity concepts nor a drive to learn them; they did not see the purpose in a society that felt inherently safe. This was reflected in the broader industry contexts as well, with hospital and energy companies indicating to researchers that security was not a significant concern (Falco, 2021).

At the beginning of the course described in this case study, students widely reported an unfamiliarity with cybersecurity concepts, with only one student stating that they were "very familiar" with the topic. This was addressed in part by introducing basic cybersecurity concepts into the curriculum, which students had a chance to apply each week in homework assignments, and was reinforced through storytelling with our guest speakers. In the latter instance, invited speakers (professionals working in cybersecurity today) were invited first to share stories of their experiences and then to answer questions from students and in some cases offer feedback on current work.

One memorable guest speaker described a social engineering attack in which the owner of a high-value Instagram account was bombarded with unpaid pizza orders until they surrendered their handle (this individual was located in Manhattan, within delivery range of seemingly endless pizza shops.) In a class that focused on helping students identify non-technical security attacks, the "pizza attack" story became a recurring reference point, one that the students could attach certain concepts to and remember them. In fact, throughout the rest of the semester and into the final projects, students were referencing not just the pizza attack but other stories from the guest speakers' visits as well.

What Worked Well

Running through assignments together in first half of the course and then applying that knowledge in the second worked well, providing a needed introduction as well as an embodied experience working with these skills and processes.

The course was also set up such that small increments of work were completed each week, and the students' final projects were largely finished by the end of the semester, giving them a chance to use the time to critically assess and iterate on their own work rather than creating it from scratch. Students were also asked to turn in their final projects two weeks before the end of the class in order to receive feedback, reflect, and make one more iteration of their work before the grading period. Students were also welcome to resubmit work at any time during the semester for re-grading. While these details are largely pedagogical, they were also intended to reinforce core concepts of cybersecurity and information management: that it is more useful to think of the work as constantly improving than to think of it as finished, that it is crucial to reserve time for sensemaking and reflection, and that big changes can be made through a series of small, manageable actions.

Areas to Improve

One of the most interesting outcomes of the work came from sharing a model used by my team for years to reframe user experiences in security contexts: user and "anti-user" personas[1]. The "anti-user" persona developed out of a need to articulate not just the needs, motivations, actions, and tools, etc., of a user in the system, but also someone not anticipated at all by the system's architecture, be it an outside attacker, malicious insider, or the inadvertent error of someone accidentally given the wrong level of access. Students quickly understood the concept of an "anti-user" persona, but their first passes tended to be more generalized and less nuanced than their user personas. While the user personas often had quirks (a love of Dolly Parton, for example, or a pet chihuahua), the anti-users tended to be described with a small set of tropes, and given no more specific a role than "hacker" (in some cases, not even a name.) In Iceland as in the United States and elsewhere, the classic stock image for "hacker" (and indeed, often for cybersecurity in general) is a faceless individual in a hooded sweatshirt, sitting before an open laptop in the blue light of a windowless room. This image haunted the first drafts of anti-user personas, whose love of sweatshirts was only rivaled by their love of money, and who lived and worked most frequently from their home basement[2]. We pivoted by bringing ethical hackers into the classroom to share stories, answer questions, and in one case comment on a MURAL board of the students' project topics, giving additional details and questions to consider. This was followed by a lecture on what makes a financially-motivated criminal syndicate differ in tools, goals, and attack vectors from a state sponsored group, or a FIG-motivated (Fun, Ideology, or Grudge) individual attacker, as well as which types of attackers or attack groups are most likely to target which industries. Having learned about "anti-users" at a deeper level of specificity, students were asked to assess in future work what types of attackers and attacks were most likely for the sites they were exploring.

Even with the changes made, there is room to improve the experience of how students imagine the "anti-user" user experience and to more systematically consider which processes will slow down or better enable those "anti-users". Particularly if a lessening of pandemic risk allowed for more in-person interaction with guest visitors to the classroom, having face time with white, grey, or black hat hackers[3] during a social engineering engagement or other piece of security work might enrich the students' understanding of the "anti-user" experience and how it fits into the functioning of technical systems that they may in their future careers be responsible for protecting.

In addition to the above, one particular session needed to be made virtual due to the pandemic, and this is one of the missed opportunities that could be worth trying in future iterations of the course. Originally, the students were scheduled to participate in a hands-on activity where they would breach the perimeter of an "office" and collect vulnerable data, such as a password prominently written near a laptop and sensitive documents in the trash bin. The intent was to give the class a visceral experience of information vulnerability, one they could remember in future contexts where they might be building technology solutions and could consider security requirements beyond immediate technical ones like encryption. While not possible during the week scheduled due to pandemic restrictions, this might be a worthwhile experience to provide, reinforcing an embodied understanding that systems can be broken into, in order to hold more informed conversations about how to protect those systems.

FIELDWORK

The approach taken in this course was to first expose students to different security ethnography techniques through a mixture of lectures, videos, speakers, podcasts, and case studies. Then, after selecting a field site of interest to them, each student carried out fieldwork at those places over the course of a semester, taking notes and often diagrams or pictures, and recording their own observations.

Sites

First, each student chose a local site; they were encouraged to chose a place that was interesting and engaging to them, but also relatively easy to access (so as to limit obstacles to their getting coursework done on time.) The idea was for them to, at the end of the day, tell a story about their community. Projects were mostly centered in Reykjavík, but a few remote students were elsewhere in Iceland and one Swiss student focused on the Swiss-Iceland expat tax experience.

Students were required to spend time in their chosen sites in person. Although by this time the pandemic risks in Iceland were comparatively low, as a safety precaution the students were able to chose an online "location" and spend time in those online spaces if they preferred or to conduct an auto-ethnography on their home offices[4]. Other chosen sites included the local pool, a hospital cafeteria, the Icelandic Patent Office, a horse paddock where horses were microchipped, a local technology services company, the domestic airport, the international airport, a gym requiring biometric entry, the National Library, and more.

Student Fieldwork Requirements

For the fieldwork component of this course, students were asked to spend time in/with their chosen sites. They were given templates to note behavior and draw maps that included spatial data from the larger environment and interconnected systems. Almost every student included photographs in their field notes as well, with the intent to capture security-sensitive aspects of the sites that they hoped to learn more about through their observations during the semester. (fig. 1-2)

FIELD NOTES	Location: Icelandic Intellectual Property Office, Reykjavík	Date: 21.03.2022

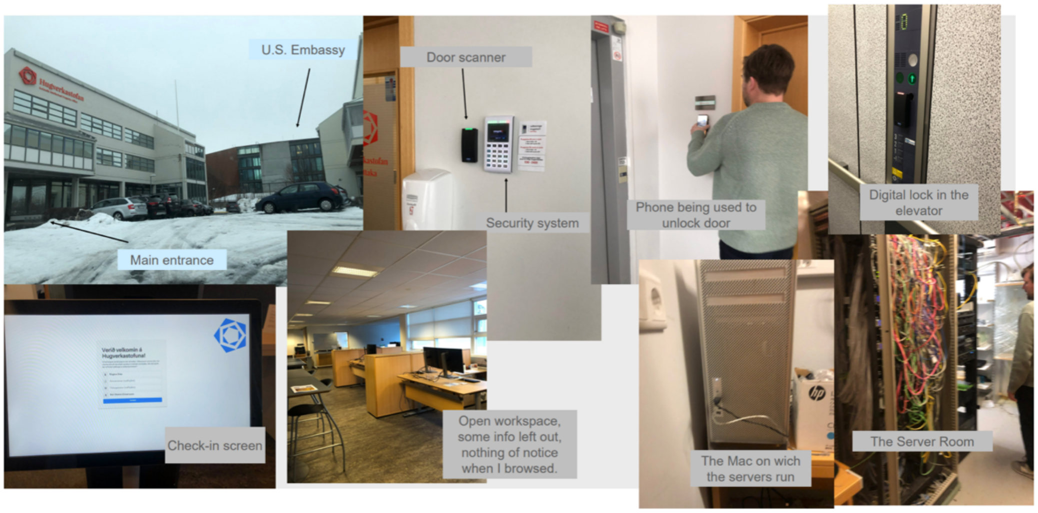
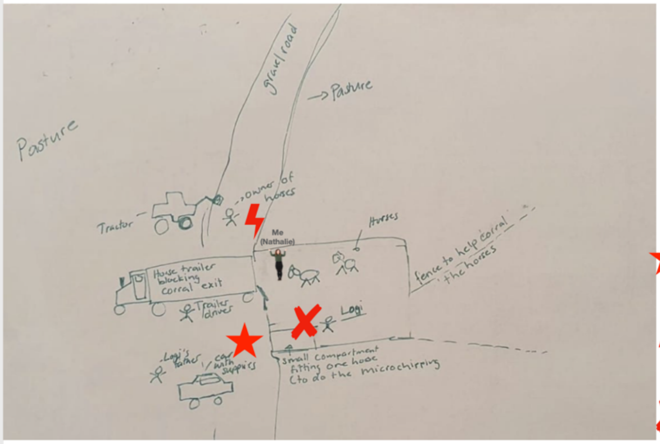

U.S. Embassy
Door scanner
Main entrance
Security system
Phone being used to unlock door
Digital lock in the elevator
Check-in screen
Open workspace, some info left out, nothing of notice when I browsed.
The Mac on wich the servers run
The Server Room

Figure 1. Section of student notes from visit to Icelandic patent office. Photograph © Ragna Dúa Þórsdóttir, used with permission.

FIELD NOTES	Location: Suðurland close to Herriðarholl	Date: 17.03.2022


Pasture
gravel road
→ Pasture
Tractor
owner of horses
Me (Nathalie)
Horses
fence to help corral the horses
Horse trailer blocking corral exit
Trailer driver
Logi
Logi's father
car with supplies
Small compartment fitting one horse (to do the microchipping

Logi: He was doing the microchipping (Is certified by MAST, the icelandic Food and Veterinary Authority)
Logi's father: Was just there to watch and drink beer. (The mood was very informal and relaxed)
Owner of the horses: Was there to identify the horses (so the right horses get the right microchip) and to let us know which horses are supposed to go to the slaughterhouse.
Me ([redacted]: Helped corral the horses, hold them still for microchipping and putting them on the trailer.
Trailer driver: Helped load the horses on the trailer and drove them to the slaughterhouse afterwards.

★ Microchip numbers and the horse who got the number were written down on special form, which will then have to be sent to the authorities concerned with microchipping here in Iceland. Would be very easy to „connect" the wrong microchip number and horse.

⚡ Logi (the one doing the microchipping) had to trust the owner of the horses to tell him the truth about which horse was which. Would be very easy for an anti-user to abuse that trust.

✗ The microchipper himself could switch the microchip he injects while he does it.

Figure 2. Section of student notes from visit to horse paddock for microchipping. (Original names redacted) Photograph © Nathalie Monika Moser, used with permission.

One key way that security ethnographic work differs from what has historically been practiced in ethnography is its special emphasis on shortcuts, workarounds, human error, and any occasion where a disconnect appears between the worldview assumed by a system and the worldview experienced and/or enacted by a human user. Oftentimes, in this context, understanding how a system works is not nearly as interesting or useful as understanding how it doesn't. Students built up an understanding of the security landscape in their chosen site, considered how those elements worked together, and identified points in the system with the potential to lead to unintended consequences—and particularly, to security incidents. The ethnographic skills of observing complex human-influenced systems, synthesizing data, deriving critical insights, and telling a story about that were all important here.

All ethnographic work undertaken in this course was framed as the beginning of future conversations, with room for expansion and further understanding. Sensemaking activities were accompanied by a documentation of assumptions and outstanding questions. The goal was for students to have a piece of work that they could conceivably bring to an employer or graduate advisor to say, "here is what I have discovered and observed so far; I would like to do *x* work in order to further an understanding of *y*, and this is what would need to happen to accomplish that."

Overall, the students' fieldwork experiences helped to underscore that they as technologists were empowered to observe and identify the security elements within a system (that this could be part of their process), as well as to share those observations with their peers. Compared to the initial example sites that were used by all the students when learning the introductory material, the sites students chose individually seemed to elicit a stronger enthusiasm and sense of ownership, with students adding additional visits and questions to their research unprompted. Situating their experiences within known sites also seemed to add a level of concreteness to the sometimes nebulous and difficult-to-visualize topic of cybersecurity—the floating blue fields of 1's and 0's in cybersecurity journalism replaced by a poorly-secured router in the local gym that is easier both to envision and to address.

STORYTELLING

After initial sensemaking based on their ethnographic observations, the students worked on telling stories about how cybersecurity might develop in these local places via a methodology called Artifacts from the Future (which Lindley, et al. describe as "intentional design fictions").

Students collected signals of change related to the sites they were studying, and assessed those signals according to which were most likely to persist over the next ten years and which were most likely to impact the everyday realities of their site. They then explored the implications of key signals using the Futures Wheel tool, (Glenn, 1972) (fig. 3) and generated a list of questions and ideas related to that space. From this, they imagined and created an object that might exist in the security landscape of Iceland in 2032, along with stories about the item's purpose and use. These stories took the form of chat conversations (using 2032 slang), breaking news articles, minutes from a professional organization, straightforward narrative, and other formats. They were peppered with details from the students' field work and their perspectives on how those elements of the site experience would develop in the forthcoming ten years.

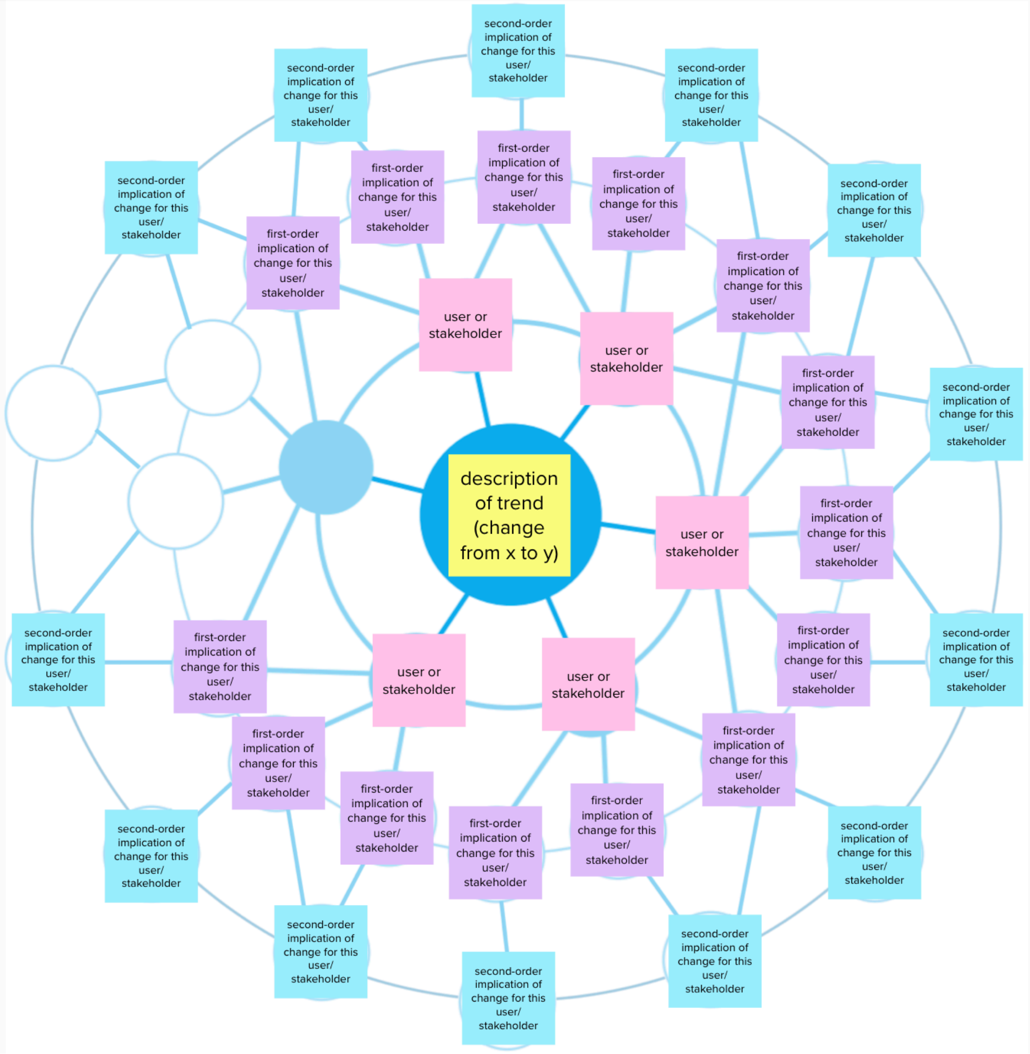

second-order implication of change for this user/ stakeholder
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Figure 3. Futures Wheel example template, partially filled. This is a modification of Jerome Glenn's 1972 Futures Wheel method, and uses a ring of user/stakeholders to frame the changes from specific user perspectives. In the case of this class, "anti-user" personas were also included here. © Meghan McGrath.

Together, the class created a multifaceted and thoughtful picture of Iceland's cybersecurity future, with objects that could be picked up, handled, and considered. These objects presented *multiple* versions of the future, whether hopeful or dystopian or somewhere in between, and formed a sort of multiverse of Icelandic security futures when taken together. This framing is especially useful at putting participants in an empowered position of deciding which of the many futures proposed they would like to work towards or away from—rather than simply waiting to inherit whichever single future arrives for them. For a security culture that had been expressing throughout 2021 a sentiment of "it will be fine," but which suddenly found itself in the potential attack line of a global superpower, this conversation found an unexpected relevance and usefulness for the community.

The students' multiverse was on display in an exhibit that is detailed below in the "Deliverables" section. It engaged in a public conversation far beyond the initial classroom constraints, and generated conversations in some cases at a national level.

What Worked Well

Using the Artifacts from the Future technique proved useful not just in helping students apply the insights of their field work into concrete, sharable forms, but also to engage the broader community with the work the students were doing. The class developed a set of imaginative and engaging artifacts, and throughout the month of their exhibit I received messages from visitors expressing interest and appreciation. In the world of security, this is no small feat.

Security professionals, like user researchers and industry ethnographers, are familiar with the concept that in order to do the job well, one must sometimes be the "canary in the coal mine," the bringer of bad news who alerts the community that something is amiss. This can be a difficult position. Unexpected issues require unexpected work and changes that organizations may or may not have budgeted for. Resistance to the bad news is more common in many places than a willingness to fix the vulnerability. Storytelling, then, is crucial for *making the security work happen*. A compelling story can open doors and resources that will help a system be built smarter, stronger, and protect its users' data more successfully. A story that is *memorable* will follow audience members outside of the conference room and engage them longer, invite them to brainstorm possible solutions longer, and will be easier to share through word-of-mouth with other colleagues who may have resources or knowledge that would prove essential to the project.

Areas to Improve

There is room to improve this process in the stages between when students explore the implications of key changes using the Futures Wheel and when they first begin to brainstorm their object. In some cases, students struggled to imagine what objects might characterize daily life of 2032, rather than an object that could exist in 2022 but didn't. There are a number of practices in Futures Design today that might be experimented with to frame this transition more clearly and in an easier-to-follow way.

OUTCOMES

Exhibit

The class ended with a public exhibit designed to provoke discussion in the broader community. The exhibit, named "Spoiler Alert" by the class and subtitled, "What Cybersecurity in 2032 Might Look, Feel, and Smell Like", ran through April, 2022, in the Gróska Innovation Center of the University of Iceland. This site was chosen for its proximity to downtown Reykjavík, its public accessibility, and the fact that the building was shared with or adjacent to many of the country's biggest technology companies. Walking distance to Parliament, the site was also frequented by policymakers and diplomats throughout the capitol.

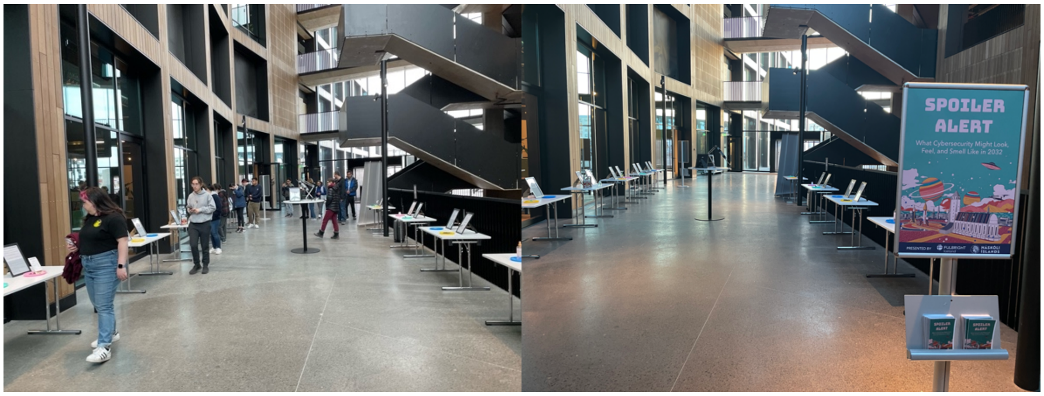
SPOILER ALERT
What Cybersecurity Might Look, Feel, and Smell Like in 2032

Figure 4. Entrance to “Spoiler Alert” exhibit, April 2022. Photograph © Meghan McGrath.

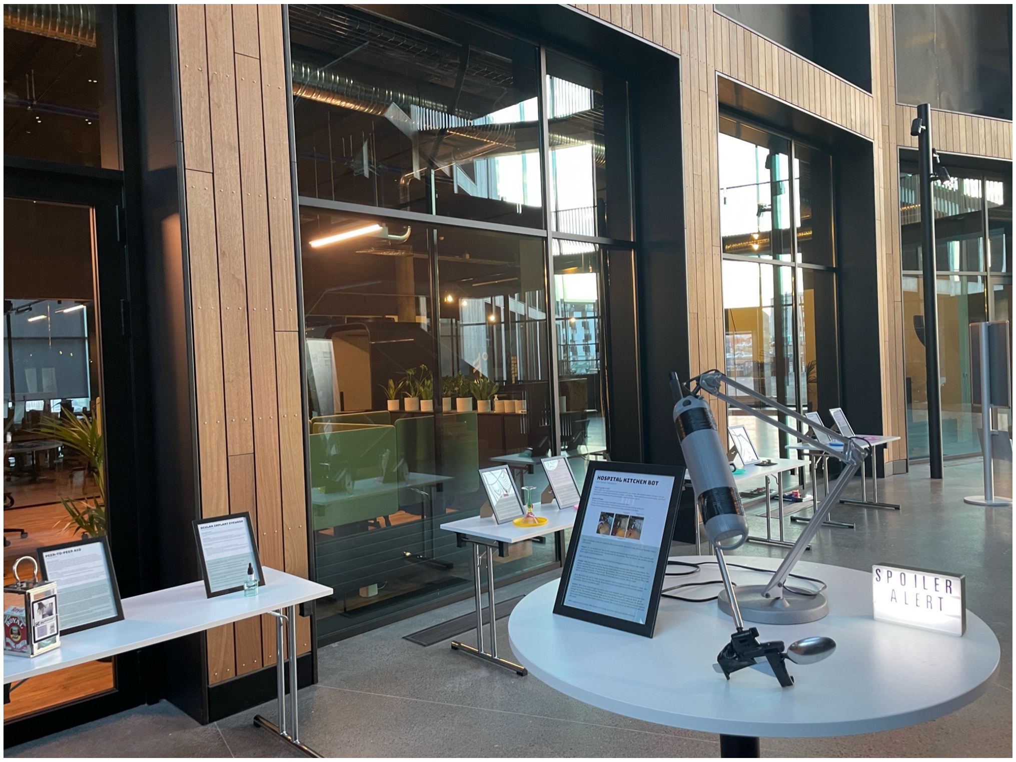
HOSPITAL KITCHEN BOT
SPOILER ALERT

Figure 5. Student projects in “Spoiler Alert” exhibit. Artifact on the right is a movable “hospital kitchen bot” intended to portion and spoon out cafeteria food in a hospital. Student story describes how kitchen bot was not designed with security in mind, allowing attackers to access the hospital network with which it is connected. Photograph © Meghan McGrath.

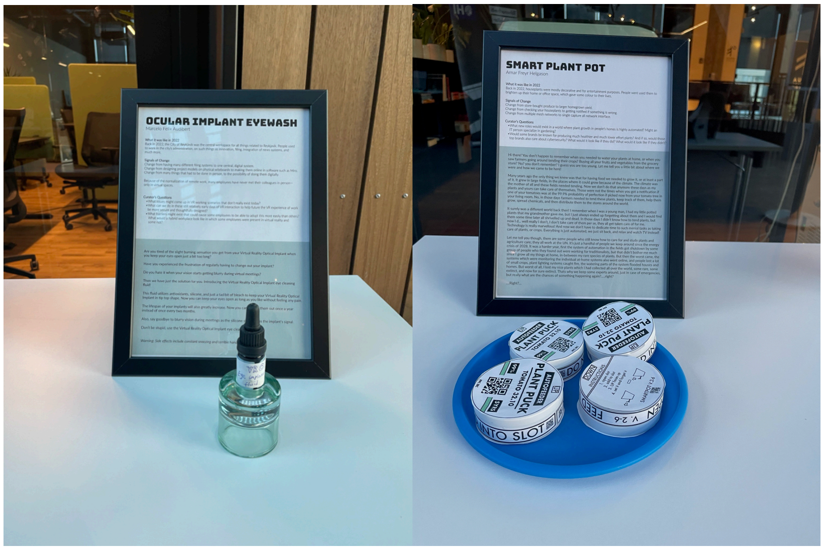
OCULAR IMPLANT EYEWASH
SMART PLANT POT
PLANT PUCK
INTO SLOT

Figure 6. Student projects in “Spoiler Alert” exhibit. Artifact on the left is “ocular implant eyewash,” intended to accompany a VR-enabled artificial eye. Artifacts on the right are smart plant cartridges for a personal plant with third party software. In this story, the plant has just been transported to a work site, compromising the owner’s company’s intranet. Photograph © Meghan McGrath.

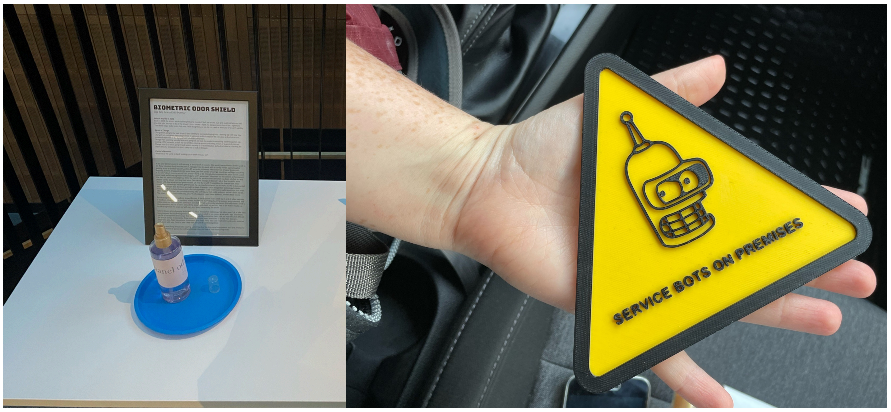
BIOMETRIC ODOR SHIELD
SERVICE BOTS ON PREMISES

Figure 7. Student projects in “Spoiler Alert” exhibit. Artifact on the left is a designer-branded adversarial scent, intended to give the wearer control over how their biometric scent signature was read in public places. Artifact on the right is a “service bots on the premises” sign, created by a warehouse employee for a world in which organizations with voice- and facial-recognition-enabled service bots would be obligated to notify anyone on the premises that they were opting in to having their data collected. Photograph © Meghan McGrath.

The exhibit featured table displays of the objects made by each student, along with the stories/scenarios they had written and a series of prompt questions for the viewer. Rather than booking a conference room, the displays were placed along a wide but busy corridor with heavy foot traffic. They received visitors from the building's tour groups and patrons of the local gym in addition to the expected neighboring technology companies (such as Alvotech, a biologics firm, and CCP Games, creator of Eve Online.) We were also honored by the attendance of Icelandic writer Bergur Ebbi, whose recent collection of essays on culture and technology entitled *Screenshot* had informed this coursework and accompanying research (Ebbi, 2020). Noted folklorist and ethnologist Valdimar Hafstein visited the exhibit and encouraged the University of Iceland's folklore students to visit as well. One emeritus professor of medicine wrote days later to say he enjoyed the work and was still thinking about it.

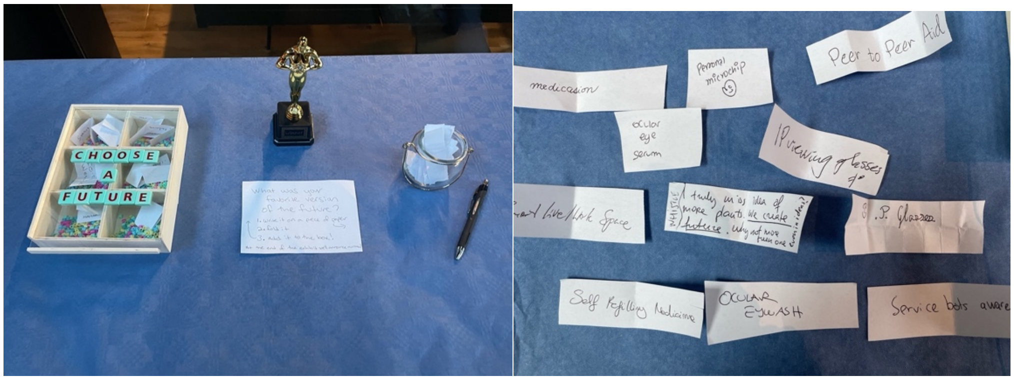

Figure 8. Voting area in "Spoiler Alert" exhibit. Visitors were invited to vote on whichever version of the future was most compelling to them, or introduced the most interesting questions. Photograph © Meghan McGrath.

Members of the National Security Council also attended or heard about the exhibit, and this led to follow-up engagements and conversations about the human aspects of cybersecurity that might impact Iceland's security posture, including conversations about the forthcoming National Security Policy that was in the process of being re-written.

What Worked Well

Showcasing the work of the students added a layer of meaning to their experience with security and ethnography during the semester, and many brought friends, family, and significant others to see the work. Since the goal of this project from the start had been tied to fostering community resilience through a connection to cybersecurity knowledge, this was an ideal outcome.

Areas to Improve

The availability of our exhibit site was somewhat limited and complicated to obtain permissions for; though we succeeded, we had no choice but to launch the exhibit in the height of the Easter holidays when many had left early for vacations or were attending confirmation parties (which are extremely popular in Reykjavík during that time.)

Fortunately, the exhibit space was reserved for the entire month, and in fact did experience a wave of new interest when students, faculty, and tech employees began returning to the building after the holidays ended.

Reusable Templates

The other key deliverable besides the exhibit was a set of reusable templates that could be shared with potential employers or graduate advisors. The idea was for students to leave the class with a portfolio of work showing their process and how they imagined security from an Icelandic lens. In this sense, it was meant to support emic storytelling—crucial in a security landscape where so much of technology is consumed in the form of imports and a better understanding of Iceland-specific security requirements is much needed.

In the class itself, the students had already "reused" the reusable templates when we applied them a second time in the student project section of the class, so students had experience interacting with these documents *as* templates in order to help them repeat what they had previously done.

If one intent of the exhibit was to create a memorable experience in which the students could see and remember themselves as cybersecurity experts for the community, in a sense, then the reusable templates might help to accompany them on that journey after the class to whatever extent and whatever context they chose to take it.

What Worked Well

Student adapted well to the templates, and each section seemed "manageable" enough that almost every student finished every assignment—astonishing in an Icelandic context where education is free and college courses can be taken and dropped or failed without significant cost or and with comparatively lower stigma than in the United States.

Areas to Improve

Although the students' final portfolios were turned in early for feedback and a final iteration, in a future version of this course it would be interesting to have guest tech professionals provide feedback and hold conversations with students about the work. This would give the students further experience with the nuances of applied security ethnography and what forms that can take in industry or public settings, as well as connecting them with professionals already doing similar work today.

REFLECTION

This case study had promising results in the case of the class itself, with students who had experienced the ethnographic approach reporting a significantly increased security consciousness—including regular conversations with friends and colleagues about what security means to them. In the sense of engaging the larger community in conversation about security, the approach of hosting an exhibit of student work also worked well.

It should be stated in reflection of the case study presented here, that it is in many ways a project informed and impacted by crisis and events without precedent in the near past. The course's curriculum was modified at times in response to local pandemic levels, and student fieldwork was undertaken with health protocols in mind. What does it mean for a student doing contextual inquiry for the first time to be aware of their research participant's sniffle as a potential health risk, or to simply not be able to see the mouths of the people around them? Crisis too informed the class's methodological trajectory in some ways, as our Artifacts from the Future activity was seeing a surge in industry practice due to a prevalent sense of generally uncertain conditions (sometimes described as VUCA or "Volatile, Uncertain, Complex, and Ambiguous"). The disruptive nature and profound strangeness of a global pandemic renewed interest in futures thinking among governments and private organizations around the world, echoed in our 2021 EPIC theme of "Anticipation" (English-Lueck, et al., 2021). Finally, the invasion of Ukraine in early 2022 reframed much of the class's perception of the course material and brought that course material into conversations with national policymakers and with staff of the Icelandic Prime Minister.

The attack happened halfway through the winter semester, just two weeks after the class had had a lecture on e-governance in Estonia. We were exploring ways that culture can inform technical infrastructure, and Estonia's long shared cultural memories of invasion were a strong driver behind the desire to create a government that has no geographic borders—essentially, one that can can persist even if its physical land were to be invaded. Our discussion of cyber warfare and kinetic invasion was still fresh on the students' minds in the wake of the Kiev attacks, and reframed the work of this course in significant and unexpected ways.

What began as an exercise in emically building up structural security hygiene within the sociological context of "everything will be fine" took on extra valences as a way for that community to bolster its grassroots defense in the event of a large-scale cyberattack. This is in part because while expensive tools and methods can be used to increase a country's security posture, the human element should not be overstated (fig. 8). While financially-motivated attacks may favor ransomware or infected code, politically-motivated attacks overwhelmingly hinge on social engineering and exploiting poor security awareness. Growing the community's familiarity with non-technical attacks can be critical in achieving resilience in not just infrastructure but many everyday technologies and services.

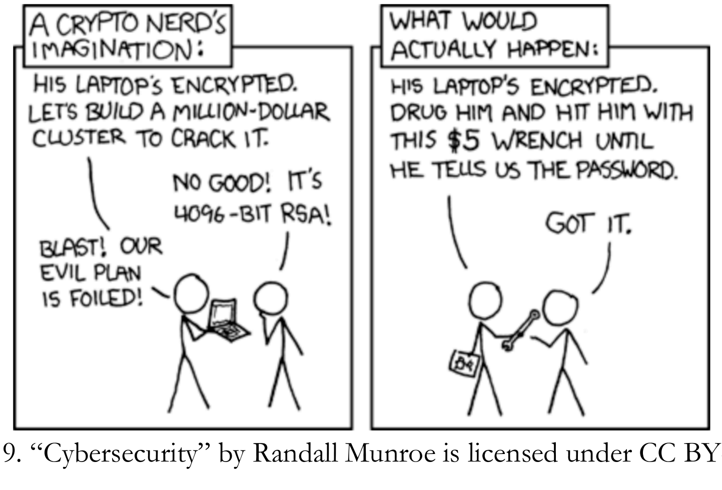
A CRYPTO NERD'S IMAGINATION:
HIS LAPTOP'S ENCRYPTED. LET'S BUILD A MILLION-DOLLAR CLUSTER TO CRACK IT.
NO GOOD! IT'S 4096-BIT RSA!
BLAST! OUR EVIL PLAN IS FOILED!
WHAT WOULD ACTUALLY HAPPEN:
HIS LAPTOP'S ENCRYPTED. DRUG HIM AND HIT HIM WITH THIS $5 WRENCH UNTIL HE TELLS US THE PASSWORD.
GOT IT.

Fig. 9. "Cybersecurity" by Randall Munroe is licensed under CC BY-NC 2.5.

Ethnographic approaches to local sites, as seen in the student work shared here, centers attention on ways that human behaviors and processes can differ from what a technical system's architecture expects. This is especially useful in countries where technology is consumed as an import, a set of tools that were built and imagined elsewhere. In Iceland, those doing cybersecurity assessments are often foreign consultants brought in from other countries. The need for stories told from a local perspective may be essential in helping energy companies, hospitals, social services and more continue to function safely into the future.

Icelandic systems not only have specific needs tied to the way the *kennitala* is used, but also need to make use of special characters like the thorn (þ) or eth (ð) that can break systems not developed with those characters' existence in mind. Due to the relatively smaller footprint of the Icelandic language (spoken by 0.004% of the world's population, as opposed to the roughly 17% that speak English), the Icelandic internet is also significantly less catalogued, and so less searchable, than the Anglophone internet (Rögnvaldsson 2012). This can create moments of vulnerability or resilience, depending how a system is designed and the assumptions about the world built into it.

Beyond this Icelandic case study, there is a need for more culturally alert cybersecurity work to provide resilience for communities and the infrastructure that supports them. While this project represents one instance of using anticipatory ethnographic approaches to grow cybersecurity skills and support broader conversations, there is much more work left to be done and more cybersecurity contexts (beyond the Silicon Valley model and other well-known models, and beyond even the high-trust, high-networked model of Iceland) to be brought into the discussion. For large-scale enterprises that handle user data located in, coming from, and traversing across a massively diverse range of cultural contexts, a lack of understanding of regional expectations around security and privacy remains a blind spot.

In a hyperconnected world, cyberwarfare and vulnerability may in many ways be a matter of brute strength—of who has the greatest computing resources, the greatest processing power. What does it mean for a community to be a fellow node in that web, with the full breadth of its citizen data, its hospital and healthcare networks, its energy infrastructure, water systems, governance, etc. living in online spaces? What might be at risk, and what does resilience look like? Although this case study does not claim to have an answer to that question, it suggests that further inquiry into the strategic use of ethnographic tools towards community resilience is justified.

Additional questions for our community include: how do we ensure that all users are receiving a baseline of security coverage when designing for a product with global reach and multicultural consumption patterns? How might we usefully measure and track that? How might we measure the implications of *not* doing that well? How can we be smarter about imagining the shifts in environmental influence (be they geopolitical, climate-driven, technological, etc., or even, as in our earlier example, tied to the availability of a critical mass of pizza parlors) that will morph these patterns in ways unlike what we see today? How can local knowledge holders inform all of the above conversations? Further examination of these questions could help communities better leverage ethnographically-informed security work in the service of sensemaking with regards to their own security posture, as well as actionable strategies towards resilient and sustainable future approaches.

Meghan McGrath is the Future Demands Lead for IBM Systems. She led the design and ethnography work on IBM Pervasive Encryption, which work has been featured in Fast Company and in a HBS case study. She represented IBM at the 3Ai Institute from 2019-2020. Connect at meghanmcgrath@us.ibm

NOTES

Many thanks to the Háskóli Íslands students of HBV604M, the faculty (especially the guidance and support of Matthias Book), and to the Fulbright Commission Iceland and National Science Foundation for funding this work.

1. It is worth noting that the term "anti-user" carries a level of imprecision in today's industry use, ranging from the intentionally/unintentionally malicious user (as described by this case study) to the wholly absent user who is *out of scope* for a project being designed. For my team and for the purposes of this class, "anti-user" has been sufficient to connote the former user—one who is present in a system that was not designed for their presence.

2. What makes this trope so misleading and so problematic a mental model for computer science students is its persistent suggestion that malicious attackers can fit into a single hoodie. In today's cyber landscape, security incidents are far more likely to be perpetrated by sophisticated syndicate organizations or state actors with enterprise-grade resources and computing power than by an individual working alone. (Klimburg, 2017; Buchanan, 2020; Verizon 2021)

3. The following summary from *Wired* will work for our purposes: "White hats disclose vulnerabilities to software vendors so they can be fixed; black hats use or sell them to other criminals to conduct crimes; gray hats disclose or sell them to governments to be used for hacks against adversaries and criminal suspects." (https://www.wired.com/2016/04/hacker-lexicon-white-hat-gray-hat-black-hat-hackers/ Accessed Sept. 2, 2022)

4. Students looking at online spaces were particularly directed towards the field of digital anthropology/ethnography for examples of what this practice has looked like from the 1990s up until today.

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Wildcards

This new program category was designed to inspire out-of-the-box ideas from our community. The committee invited creative proposals, of any kind, that engage with the theme of resilience—and the result is a mix of visual, interactive, contemplative, and other unique engagements.

New Words for New Worlds

CATO HUNT, *Space Doctors*

Our current language of business is no longer fit for purpose. We are all sharply aware of the urgent need to transition into a regenerative economy, yet the words we use are holding us back. We must stop using vocabulary which roots us within a failing system and instead create a new lexicon of resiliency. By introducing new concepts and metaphors we can redefine organizational success through new values and behaviors which embody the changes we must make. Join us for a live, 3-day hive mind where we come together to co-create some inspiring new starting points for this journey.

Let's Shift Power Together!

An EPIC Co-Creation Activity

CHELSEA MAULDIN, *Public Policy Lab*
NATALIA RADYWYL, *Today*

I (and a translator) were interviewing a woman in her home when her husband came home and was angry to find us, and demanded we stop and leave.

I was asked to name-drop in an academic paper to get it accepted by the organizers/editors.

When I do research in our stores and associates refer to me as being "from corporate," I try to reframe as "I'm from tech" so that corporate "bad behavior " doesn't transfer to me.

These quotes, from participants in a 'wildcard' session we led at EPIC 2022, illustrate moments when session participants felt that their work led to uncomfortable intersections with systems of power. It was moments like these that prompted us, as then-colleagues at the Public Policy Lab (https://www.publicpolicylab.org/), a New York City-based nonprofit that collaborates with government agencies, to develop a framework for assessing how our research and design projects could more deliberately name and shift power imbalances.

Now, Chelsea still works at Public Policy Lab and Talia has moved on to Today (https://today.design/), an Australian-based B-Corp that designs strategic solutions for the purpose sector, but we remain fascinated by how power — who has it, who doesn't — informs our projects and affects the resiliency of our work. At EPIC, we invited our conference-mates to join us in a co-creation activity, based on our power-shift framework, and explore how we might more consciously engage with power in our professional lives as researchers and designers.

In this article we'll share some of the theoretical grounding that underlies the frameworks we developed, describe the frameworks themselves, and finish by detailing how EPIC's wildcard participants co-created a broad range of tactics that we might all use in our work to shift power.

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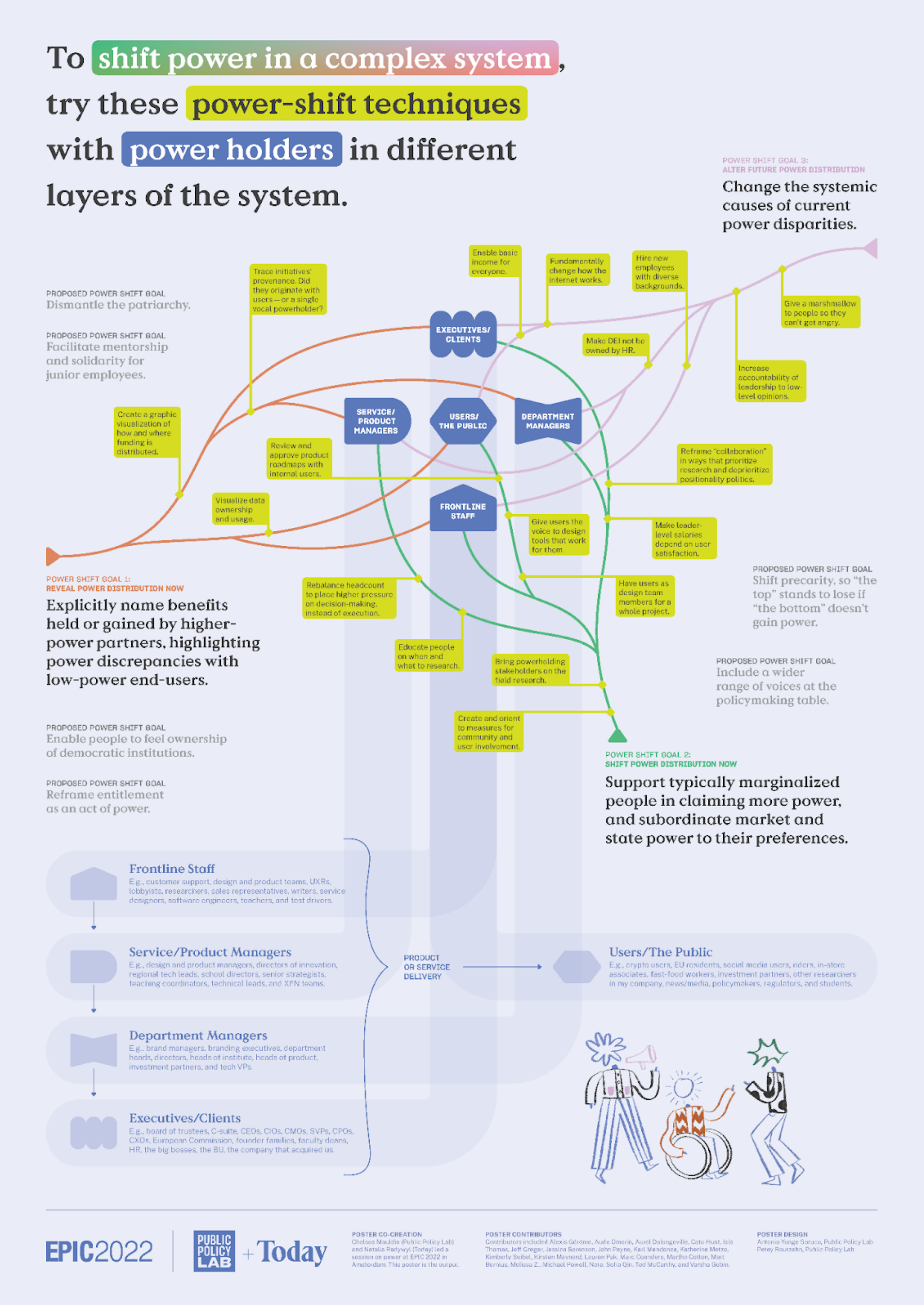

To shift power in a complex system, try these power-shift techniques with power holders in different layers of the system.

POWER SHIFT GOAL 3:
ALTER FUTURE POWER DISTRIBUTION

Change the systemic causes of current power disparities.

PROPOSED POWER SHIFT GOAL
Dismantle the patriarchy.

PROPOSED POWER SHIFT GOAL
Facilitate mentorship and solidarity for junior employees.

Trace initiatives' provenance. Did they originate with users — or a single vocal powerholder?

Enable basic income for everyone.

Fundamentally change how the internet works.

Hire new employees with diverse backgrounds.

Give a marshmallow to people so they can't get angry.

Make DEI not be owned by HR.

Increase accountability of leadership to low-level opinions.

Create a graphic visualization of how and where funding is distributed.

Review and approve product roadmaps with internal users.

Reframe "collaboration" in ways that prioritize research and deprioritize positionality politics.

Visualize data ownership and usage.

Give users the voice to design tools that work for them.

Make leader-level salaries depend on user satisfaction.

Rebalance headcount to place higher pressure on decision-making, instead of execution.

Have users as design team members for a whole project.

Educate people on when and what to research.

Bring powerholding stakeholders on the field research.

Create and orient to measures for community and user involvement.

POWER SHIFT GOAL 1:
REVEAL POWER DISTRIBUTION NOW

Explicitly name benefits held or gained by higher-power partners, highlighting power discrepancies with low-power end-users.

PROPOSED POWER SHIFT GOAL
Shift precarity, so "the top" stands to lose if "the bottom" doesn't gain power.

PROPOSED POWER SHIFT GOAL
Include a wider range of voices at the policymaking table.

PROPOSED POWER SHIFT GOAL
Enable people to feel ownership of democratic institutions.

PROPOSED POWER SHIFT GOAL
Reframe entitlement as an act of power.

POWER SHIFT GOAL 2:
SHIFT POWER DISTRIBUTION NOW

Support typically marginalized people in claiming more power, and subordinate market and state power to their preferences.

Frontline Staff
E.g., customer support, design and product teams, UXRs, lobbyists, researchers, sales representatives, writers, service designers, software engineers, teachers, and test drivers.

Service/Product Managers
E.g., design and product managers, directors of innovation, regional tech leads, school directors, senior strategists, teaching coordinators, technical leads, and XFN teams.

Department Managers
E.g., brand managers, branding executives, department heads, directors, heads of institute, heads of product, investment partners, and tech VPs.

Executives/Clients
E.g., board of trustees, C-suite, CEOs, CIOs, CMOs, SVPs, CPOs, CXOs, European Commission, founder families, faculty deans, HR, the big bosses, the BU, the company that acquired us.

PRODUCT OR SERVICE DELIVERY

Users/The Public
E.g., crypto users, EU residents, social media users, riders, in-store associates, fast-food workers, investment partners, other researchers in my company, news/media, policymakers, regulators, and students.

EPIC2022 | PUBLIC POLICY LAB + Today

POSTER CO-CREATION
Chelsea Mauldin (Public Policy Lab) and Natalia Radywyl (Today) led a session on power at EPIC 2022 in Amsterdam. This poster is the output.

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POSTER DESIGN
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RESILIENCE AND POWER DISTRIBUTION

A key dynamic in resilient systems is interdependency. However, resilience is not an inherently emergent characteristic of a system. Historically, our organizational structures have relied on interdependencies characterized by uneven distributions of power. These high concentrations of power have only been sustained by limiting the amount of power that others in the system have access to. For example, corporate executives making decisions that affect service workers and users that result in enormous pay disparities and unaffordable pricing while remaining impermeable to dissent or change.

Yet, since the 1990s, we have been stumbling through an era of 'reflexive modernization' (Beck, Giddens, Lash: 1994) in which the conventional hierarchies of modern institutions and systems are dissolving. We're bearing witness to this dissolution through crises such as the erosion of the liberal democratic nation-state and fake news undermining the credibility of the fourth estate.

Fortunately, new opportunities emerge when complex systems undergo these large shifts. When thinking specifically about the issue of concentrated organizational power, these opportunities are surfacing around concerns with equity and shifting towards flatter, more inclusive and reflexive interdependent systems. We've seen this emerge through instances such as service industry employees self-organizing to unionize within large corporations.

For those involved in professional production of research and design, this shift has been manifesting in a rising trend towards distributed and participatory project practices. For example, data collection is increasingly recognized as an extractive practice when solely conducted by a team's researchers. As a consequence, we're seeing a drive towards participatory methods as a new standard for conducting ethical fieldwork, such as through peer-led methodologies. Similarly, project teams are attempting to distribute the power they typically harbor through 'co-production' project models, by which members of the public with lived experience of a relevant program or service area become a formal part of the project team or an advisory group, which may also include advocates, community leaders, and policy makers. Through the co-production, this blended team collectively shares experiences and builds capabilities by doing the entire project together, from planning through to research and co-design.

For projects to be successfully grounded within inclusive and equitable practices such as these, decision-making power and authority must be distributed. This involves high power stakeholders (such as clients and funders) recognizing the value of ceding their hegemonic power so that more diverse voices play a role in sharing perspectives and making decisions. The outcome is a more resilient organizational structure that develops interdependencies with a broader network of stakeholders who can provide input, socialize ideas, and guide implementation more successfully than the project team or project partner could have done alone.

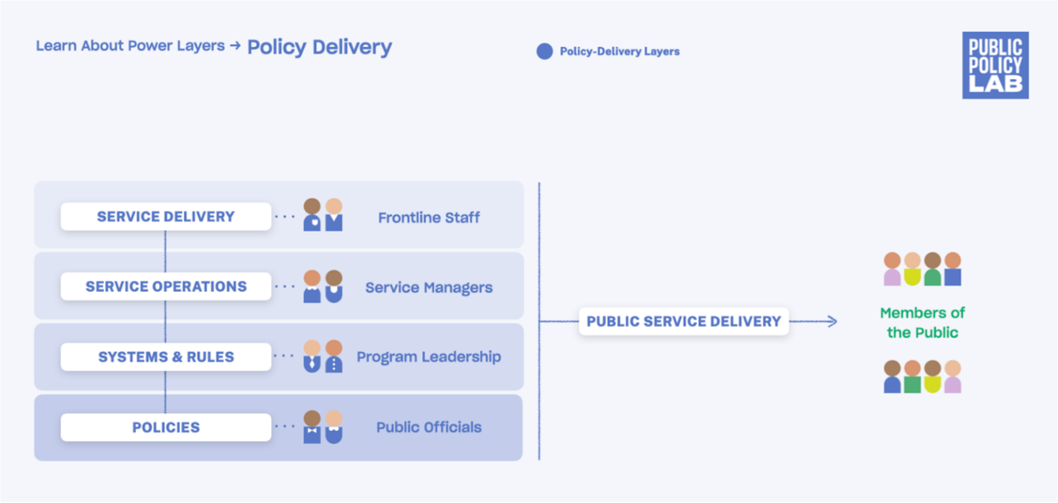
While these shifts are important and early indications of promising systemic change in the organizations we work in and for, the practices are nascent. *Practitioners seeking to transform their project and organization's practices frequently lack the tools, the support, and even the vocabulary to shift to more resilient and equitable ways of working.* How do researchers and designers with progressive intentions to shift power make actual change in the hierarchical organizations they work in and for?

OUR FRAMEWORKS FOR POWER SHIFTING

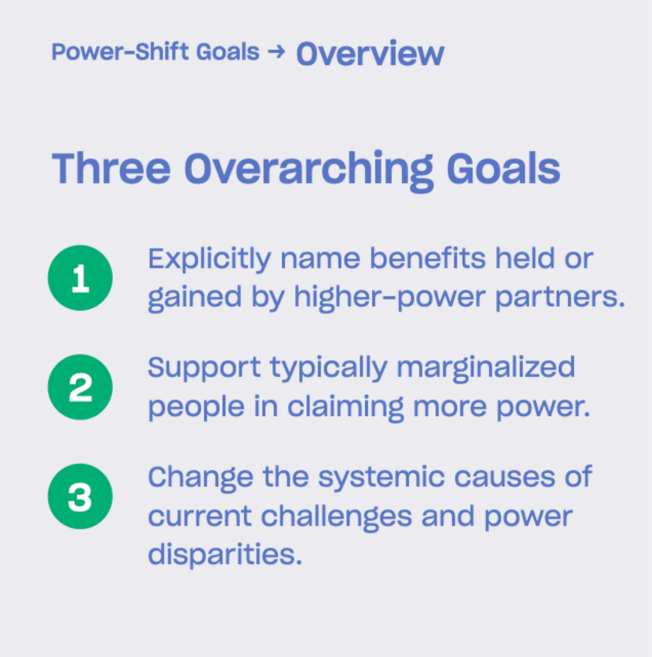
Over the past several years, the Public Policy Lab, a developed several internal tools for observing power distribution inside complex government systems and for proactively identifying opportunities to shift power from current power holders to stakeholders who currently hold limited power.

The first of these frameworks, PPL's power layers, is a simplified model for representing common functions and roles inside of government systems. The complex hierarchies of policy creation and delivery are reduced to just four *functions* and **roles**:

Service delivery is led by **frontline staff** – the human face of the government service to the public, even though they might be employed by a contracted community-based organization. Out of all the humans involved in this process of delivery policy, they're both closest to the public and usually the least empowered. Then there are **service managers** who are responsible for the *service operations* that keep a program or service running; they'll often have authority over the frontline staff. **Program leaders** are responsible for establishing and overseeing the *rules and systems* that regulate programs and services — the actionable program mechanics that turn the *policies* that **public officials** create into something real that exists in the world. This framework for thinking about system operations, although minimalist, is useful for observing who has power in a given organization over what.


Learn About Power Layers → Policy Delivery
Policy-Delivery Layers
PUBLIC POLICY LAB
SERVICE DELIVERY
Frontline Staff
SERVICE OPERATIONS
Service Managers
SYSTEMS & RULES
Program Leadership
POLICIES
Public Officials
PUBLIC SERVICE DELIVERY
Members of the Public

PPL's second useful framework is a set of power-shift goals: aspirations or intentions for observing and attempting to alter how power is allocated in systems. These goals grew from the observation that well-intentioned human-centered research and design practices, even when well executed, frequently fail to meaningfully change how power is exercised. Rather, the newly designed outputs of HCD processes often improve aspects of service implementation without fundamentally altering why the less-optimal prior solutions came to be — allowing for reversion to forms and behaviors that perpetuate power imbalances. To more significantly change how a system functions, we believe researchers and designers must move past 'good' HCD goals to more systemic change by embracing three power-shift goals:



Power-Shift Goals → **Overview**

Three Overarching Goals

1. Explicitly name benefits held or gained by higher-power partners.
2. Support typically marginalized people in claiming more power.
3. Change the systemic causes of current challenges and power disparities.

Rather than only naming benefits to be gained by low-power end-users, we must **explicitly name benefits held or gained by higher-power partners, highlighting power discrepancies with low-power end-users.** Rather than consult with typically marginalized people when deciding how to exercise state power, we must **support typically marginalized people in claiming more power and subordinate state power to their preferences.** Finally, rather than building capacity of low-power service users to handle current challenges, we must **change the systemic causes of current challenges and power disparities.**

EPIC WILDCARD SESSION

These two frameworks formed the basis for our co-creation activity at EPIC 2022, intended to explore how EPIC's community of applied researchers could cultivate deliberate shifts in power distribution. In a 90-minute 'wildcard' session, participants collectively iterated on the Public Policy Lab's power-redistribution frameworks to develop an EPIC-specific set of strategies for embedding equitable systemic resilience in their work, whether at a major tech or consumer firm, a government agency, or a consultancy.

To kick off the wildcard session, participants were invited to share their 'power moments': times in which their work intersected with power in uncomfortable or surprising ways (such as those outlined in the introduction to this article). This experiential reflective exercise intended to remind participants of their own positionality within systemic power at work. The pace then picked up as we shifted into co-creation, which comprised rapid participatory activities involving mobile phones, real-time polling and content-sharing using Mentimeter, and collectively taking stock of each others' responses.

After learning about the power layers, participants responded to Mentimeter prompts to share the layers appearing in the power hierarchies they work within. We then walked through power-shift goals as a primer for participants contributing their own power-shift tactics for disrupting power. By making together in this way, it was the authors' intention that the EPIC community would participate in a micro-enactment of the collective action that resilient systems and societies require. Immediately after the wildcard session, we synthesized the content created by the participants and laid it into a poster format, which we sent out for rapid printing. The following day, we made the power-shift posters (see above) available to all conference attendees as both a thought piece and tool for driving daily action toward social resilience. (It should be noted that this 'rapid' turn-around was only possible because the output leveraged multiple years of iterative use of these frameworks.)

A small sample of the tactics contributed by the EPIC community included:

- To reveal power distribution now, create a graphic visualization of how and where funding is distributed, with executives/clients, department managers and service/product managers
- To shift power distribution now, have users as design team members for a whole project
- To alter future power distribution, increase accountability of leadership to the opinions of those with less power

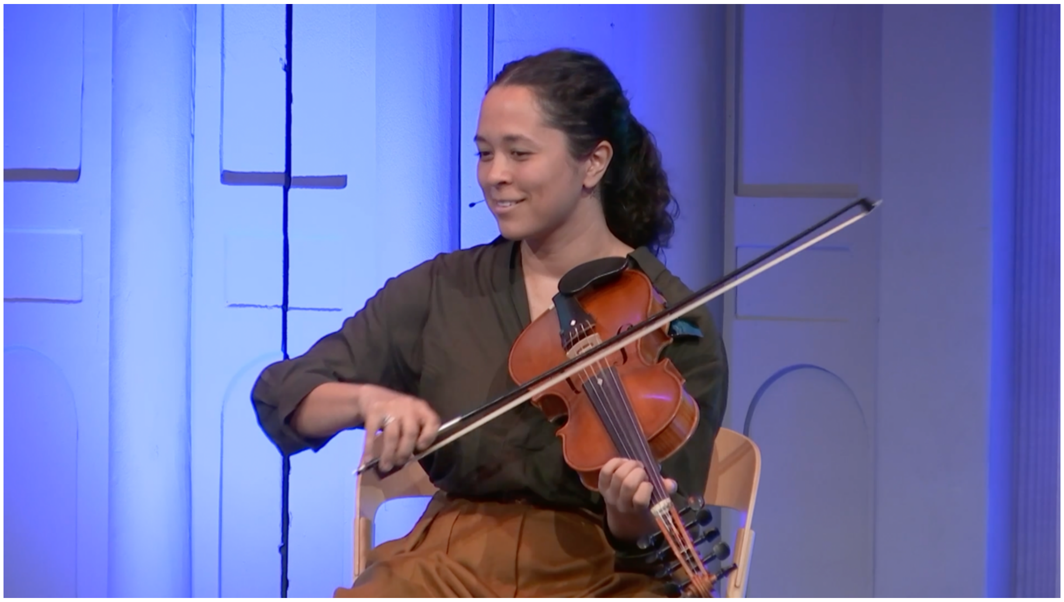
While this session represented only a 90-minute commitment and was intended as a high-energy exercise, this type of work represents a direction the authors believe is critical for real and resilient change. If we don't identify and visualize power, we cannot begin shifting it. If we don't think in systems and what it takes to cultivate equitable new social contracts, well-intentioned interventions (around climate, justice, or freedom) may fail to have impact — or worse, have unintended negative consequences. We cannot build the systems of the future using the power dynamics of the past.

Preservation Through Innovation

New Works Inspired by Tradition

ZOSHA WARPEHA, *Independent Artist*

In this session, violinist and composer Zosha Warpeha speaks about her artistic research in Norway, which involved an immersive study of Nordic traditional music and the development of a highly personal solo performance practice. This session illustrates a participatory model of ethnographic research through which the artist built an embodied knowledge of traditional music and laid the groundwork for artistic expansion. She speaks about aural transmission in traditional folk music, tacit knowledge attained through embodied practice, and reciprocal relationships between bodies in space. She also discusses the tension between two visions of preservation—one that captures a tradition in a single moment in time and one that allows the tradition to organically evolve alongside a community—and makes the case for the necessity of innovation as a method of preservation and resilience. This livestream includes a short musical performance that demonstrates the culmination of the artist's immersive research.



Tracing Neighborhoods in the Sky

DAVID GOREN, *Independent Audio Documentarian*

A sonic ethnography centered around an interactive sound map of Brooklyn's pirate radio stations serving West Indian, Latino, and Orthodox Jewish neighborhoods. Drawing from eight years of radio airchecks, interviews with station operators, listeners, and their opponents, the presentation will examine the cultural and political forces that created this illegal grassroots radio community, its uncertain future, and the methodology behind the project.

Brooklyn Pirate Radio Sound Map: https://www.pirateradiomap.com/

When Resilience Becomes Resistance

Recultivating Intimacy through Relational Mindfulness

CHELSEA COE, *Headspace*
JONATHAN DEFAVERI, *Headspace*

What forms of our pandemic adaptation have also become barriers to connection? In this wildcard session, around 40 EPIC attendees collectively examined the aspects of resilience that support — and sometimes hold us back from — the intimacy and safety we seek to create as ethnographers.

Researchers have faced many barriers to building connection and compassion remotely as the stress in our communities piles up from the COVID-19 pandemic. When people share their pain, how do we protect the integrity of our work while also showing care? What are we doing to ensure our own resilience? How do we show care and connection again in person after time spent adapting to screens?

In this session, the presenters began by sharing and deconstructing their own personal experiences of navigating this tension as researchers working in mental health through three lenses: connection, protection, and comfort/discomfort. Working with Headspace meditation teacher Samantha Snowden, they then led the participants in a group and partner mindfulness exercise to explore these themes and offer space to connect and listen.

After an opening meditation to ground participants in the five senses, attendees divided into groups of three. Workshop attendees then each shared with two partners about a moment when they felt in *awe*: an emotional response to something so perceptually vast that it defies our habitual frame of reference. Participants were either sharing or listening but could not interrupt to talk or ask questions, keeping the sole focus on the individual sharing. A form of resilience is required from the individual who is listening who has to maintain focus on the sharer while also feeling and at times resisting the urge to respond. Similarly, the speaker has to display a form of resilience as well in continuing to share without the normal level of feedback and affirmation we usually receive through conversation. The end result is a form of intimacy forged uniquely through the awareness of one's words, voice, and physical presence.

We closed with a guided reflection on the experience and the role of interpersonal connection, deep listening, context, and the physical environment in our practice. Participants shared about how the mindfulness exercises provided inspiration for new ways we can foster a similar degree of safety and connectedness with our research participants and their stories as we resume our in-person practice in various forms.

Silence

Divergent Listening in the Anthropocene

GRANT CUTLER, *Independent Artist*

Divergent listening describes a listening practice which seeks to raise consciousness or expand on our understanding of reality through the perception of sound. The multichannel sound installation, 'Silence', offers a space of quiet reflection, a place to ask questions, share, or rest. It is a room to imagine a more inclusive future, a world of resilience, energized by the clamorous singing of countless life forms. The installation invites participants to immerse themselves in the soundscapes of dozens of endangered natural environments and reflect on the change that an enhanced listening practice might bring to their own lives, work, and environments.

The extremely rapid loss of biodiversity as a consequence of industrialization and climate change represents a reality-bending catastrophe. How will we return from such a departure from sustainable living? What voices will we choose to guide us?

Divergent listening describes any listening practice which seeks to raise consciousness or expand on our understanding of reality through the perception of sound. I am suggesting that listening is a tool for recognizing reality outside of the human-centered paradigm. At this moment of mass environmental collapse, when our current system is so obviously not serving our best interests, I believe it an increasingly valuable action to question this paradigm.

Values of progress, production, and efficiency have laid waste to the environments which sustain and nourish us, not only physically but spiritually. Listening – a deep, slow, receptivity – is in order to begin to understand how we might operate as a community of beings who share a world, locked in collaboration, rather than as isolated and alienated individuals connected by nothing but competitive consumerism and the myth of scarcity. This is a moment for potential reconciliation, and listening to our environments, and to each other, will be fundamental in healing the scars left by global capitalism.

2022 EPIC Proceedings pp. 349–350, ISSN 1559-8918, https://www.epicpeople.org/epic

My primary interest with this project lies in exposing Western-culture's sweeping, yet largely overlooked, destruction of soundscapes: the voices of complex lifeworlds. What can the shifting sonic landscape tell us about how we might approach a more sustainable future? How might prioritizing intentional listening practices aid in developing a more holistic relationship with earth's environments? Can we reroute our energy toward more bio-inclusive living? What damage might be undone when we decolonize our sonic landscapes?

Silence is a non-durational multi-channel sound installation created from hundreds of hours of field recordings collected in endangered soundscapes throughout the world. The audio has been assembled to create a composition which pulls the background to the foreground: an attempt to de-center human hubris and highlight natural soundscapes on the edge of extinction.

The aftermath of environmental destruction is often quiet, sometimes even silent, as the life-affirming sounds of the living constituents have been removed as a matter of course. *Silence* offers a space of quiet reflection, a place to ask questions, share, or rest. The softness of the sounds is not meant to represent the complacency that has allowed this turmoil to continue, but rather it is an invitation to meditate on this state of affairs. It is a room to imagine a more inclusive future, a world of resilience, energized by the clamorous singing of countless life-forms.

Resilience is about adaptation, evolution, and creativity. Repairing the relationship with our natural ecosystems demands a paradigm shift – decentering human "progress" in favor of a more holistic approach to living within our environments; focusing on authentic connections rather than illusory divides. Can we re-learn the language of our ecosystems?

Listening is how we place our affections into the world. It helps us develop compassion, empathy, and understanding for our own being, our communities, and our environments. How might *divergent listening* ease our return to generosity and kindness for ourselves, our neighbors, and our shared world? Can we challenge ourselves to pause, take a breath, and listen before we react?

An Interactive Archaeology of the Laptop

RITA COSTA PEREIRA, *Stripe Partners*
SIMON ROBERTS, *Stripe Partners*
CHARLEY SCULL, *Meta*

This interactive poster examines the enduring but often overlooked cultural meaning of the laptop through multiple lenses (e.g. design, technology, marketing) and across the arc of the device's existence. What the team began as a complementary foundational component for a larger project on the future of VR, became a living deliverable of its own that evolved through a mutually beneficial feedback loop with primary ethnographic research. Key among the learnings were the ways in which the interactive, visual format drove stakeholder engagement while providing a more dynamic approach to foundational learning.

Autoethnography and Whiteness

KELLY SHETRON, *Writer, Facilitator & Community Builder*
ALLEGRA OXBOROUGH, *AERO Creative*
NATE MAHONE, *eBay*

In this workshop, the organizers shared an autoethnographic practice based in feminist consciousness-raising and somatic awareness to unpack how bias shows up in the lives of white people in white supremacy culture. The goal was to explore how to increase our awareness of white supremacy culture's harms, becoming more resilient in our ability to identify, discuss, and work through difficult realities. Some participants contributed critiques of the approach, including that they felt the session privileged the comfort and perspectives of white people and reinforced power structures.

Fickle Futures

How Ford is Embedding Collaborative Foresight Work to Survive and Thrive in the Era of Electrification

LYDIA O'NEILL, *D-Ford*
MEGAN ANDERSON, *D-Ford*

This workshop gives participants a hands-on window into how D-Ford, Ford's human-centred design unit, is working to demystify foresight work and make it more accessible and actionable for fast-moving design teams. We will run an online 'Signals Session', which will result in a co-created collection of weak signals around a chosen theme. Participants will leave with an understanding of a collaborative approach to foresight work, its risks and benefits, and how similar methods can be adapted for their own work contexts. In doing so, we aim to stimulate reflection on the theme of resilience at a higher level.

The Climate Crisis as Learning Space

FLOOR BASTEN, *Independent Scholar*
MARC COENDERS, *Independent Scholar*

It is becoming widely accepted that the climate crisis is a multiscale breakdown of interrelated ecological systems, caused by behavioural patterns that are unsustainable. As behaviours are largely informed by ideologies and as the latter are passed on by education, we submit that the climate crisis is also a crisis of learning.

Our game invites participants to reflect on a variety of ways of human thinking and sensemaking, i.e. paradigms. Putting the so-called Western paradigm into perspective by presenting other ontologies and epistemologies, we challenge participants to rethink learning as situated against the backdrop of new insights into the nature of 'situation', an intra-emergent phenomenon in which humans and other-than-humans are agentically enmeshed (Barad, 2007).

CONTEXT DESCRIPTION

Societies worldwide are responsible for unsustainable lifestyles. When we trace how we got to this, we see a history in which antique Greeks' speculations about a man-nature dualism are held to be unchallenged truth by Enlightenment philosophers. This truth is further reinforced during the development of modern science and has led to social fragmentation into individuals and exploitive stances towards nature. This paradigm is about essences, distinctions, and hierarchies. It is sustained by humanist education, which maintains human uniqueness among species and promotes personal uniqueness among individuals.

This paradigm has been identified as 'the Western paradigm'. However, we feel that this broad geographic label obscures a variety of paradigms in the West itself and, moreover, adherence to it in non-Western societies. Therefore, we suggest a perspective that allows us to see a variety of paradigms in more general terms.

For instance, Descola (2013) describes ontologies based on whether a culture assumes shared inner lives (soul, mentality, psychology) and shared embodiments. Animism assumes that all living creatures share a common inner life in different embodiments. Learning results from cooperation between humans and other-than-humans. In totemism all creatures share some elements of inner life and embodiment, depending on which life they continue in the sentient landscape. Learning is coming to understand how events (literally) take place. According to analogism there are radical differences between creatures regarding their inner lives and embodiments, but all are part of a web of interdependency. Learning means understanding this web and one's places therein. Naturalism assumes shared embodiment, but radically different inner lives. Learning is figuring out the essence of objects and how they interact.

Pálsson (1996) distinguishes three human-environment relations. Orientalist and paternalistic paradigms position humans opposite to the world and induce an ethics of exploitation and protection respectively. Knowledge is considered to be extracted from the world and about it (i.e. naturalistic, in Descola's frame). It is a uniquely human affair. In contrast, a communalist paradigm places humans in the world, wherein they learn by entering a dialogue with it.

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Baggini (2018) sketches how communities worldwide vary in how they think about time as linear, circular or non-existent, about atomistic, related of non-selves, and about harmonious, conflicted and virtuous societies.

Despite variation, modern thinking persists in a naturalistic, non-communalist paradigm with atomistic selves in conflicted societies with linear time. Ontologically, the world contains objects (living or non-living) that are enclosed within themselves and interact. Epistemologically, learning and development take place within the objects and consist of acquiring knowledge about the world and changing oneself. As this paradigm permeates current education and as such offers a first frame of reference, it takes active effort to learn that this frame is not neutral and to acknowledge that other options for looking at the world and humans are not only available but also approach reality as currently understood by state-of-the-art science better (i.e. animism and totemism). In short, we assume that learning *about* the climate crisis misses the point that we are *in* a climate crisis, which requires a fundamental shift in thinking ourselves *in* a situation.

THE GAME

In educational game design it is common to distinguish between a little game and a big game. The first is the actual game people play, with a set of props, rules and a goal to achieve. The latter is the process design which ensures that the learning goal is achieved.

Big game

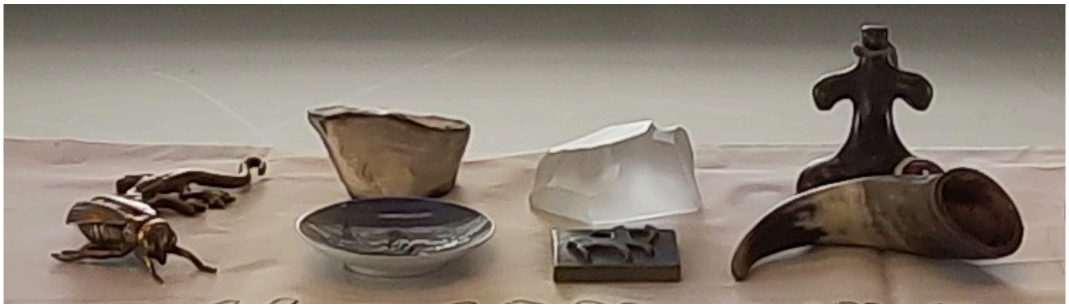

Figure 1. Totems such as figurines of a fly, a gecko, a petrified stone, a dish with a mermaid, and a tile with a centaur.

The goal of our big game is to learn to think beyond one's own paradigm by exploring pluralism in paradigms though dialogue with the more-than-human world. To ensure dialogue, the game is played in four teams with four or five players who deliberate on a question and come up with a team answer. Further, the other teams judge the quality of the answer and briefly comment on their 'yes' or 'no'. To ensure inclusion of the more-than-human world, teams play with totems that refer to Descola's ontologies (see Figure 1 for examples). Also, the powerpoint shown during the game displays a set of book covers from authors who have written about variation in paradigms (Figure 2). Totems and book covers are meant to inspire the players to think beyond their preferred paradigm. Ideally, teams could also use artefacts, animals or plants already present in the room. Finally, the only way to cross the Pálsson Line is by actually including non-humans while coming up with an answer.

Figure 2. Book covers.

Little game

The objective of our little game is to cross the so-called Pálsson Line. The game is played in two rounds: a warming up and an end game. The goal of the warming up is to stretch the imagination and experience how difficult it can be to come up with fresh ways of expressing ourselves once we are entangled in our standard concepts and definitions. Each team receives three cards with a red word and three lines on it. The assignment is to reflect on the red word and write down in three definitions how you would describe it to someone else. After 5 minutes, the cards are switched between teams, so that each teams receives three cards they have not written themselves. The assignment now is for one person to try to explain the red word on the card without using the definitions given and for the rest of the team to guess what the word is. The red words on the cards in the warming up are: learning, teaching, knowledge, wisdom, democracy, speculation, myth, global, transdisciplinary, activism, education and crisis.

The so-called End game is played on a game board (see Figure 3 for an example). All teams start from the same position ("Start"). A team throws the dice and takes steps towards the Pálsson Line. It lands on a circle with a specific colour, that corresponds with a specific category of questions. The categories are The Speculative, The Mythic, The Global, The Transdisciplinary, The Activist and The Democratic.

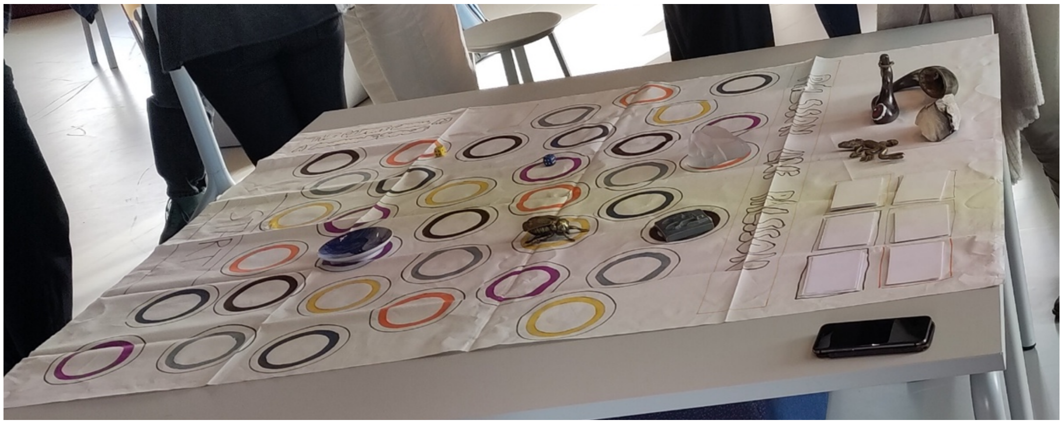

Figure 3 Game board.

All teams deliberate on an answer for three minutes. The team that has the turn then answers the question. The other teams take one minute to decide on the quality of the answer and then say ‘yes’ or ‘no’ with a brief explanation. Every ‘yes’ means an extra step forward, every ‘no’ is a step back (so if all teams agree on a ‘yes’, the team can take three extra steps). When a team is in the position to cross the Pállson Line, the game leaders decide on the quality of the answer. As said, to cross the line, a team has to actually include the non-human in coming up with an answer. If it does not, it cannot cross. The game leaders do not explain their decision. It is part of the game for the teams to figure out what is takes to cross the Pálsson Line. However, when due to time constraints the game has to end, game leaders can decide to elucidate the big game and help teams cross the line.

After the game there is time for afterthoughts, first by the teams, then by the game leaders who address uses of time pressure, muddling forward without knowing how to reach the goal, unusual questions that relate to the climate crisis and the need to collaborate and help each other cross the Pálsson Line.

We want to contribute to research focused on learning in the climate crisis and to the development of designs for learning for resilience. Our ground plan is that both the research and the climate crisis make up the learning environment: the climate crisis as a learning space. Based on Wenger (2004) we propose a game that functions as invitation to dialogue and provokes epistemic humility regarding different ways of knowledge construction.

Thinking there is one universal paradigm that functions as a neutral, objective truth for all humans and the world is a fallacy. Instead, paradigms work for the situations in which they are thought and developed. This opens the door for a new perspective on ‘situatedness’ and the reframing of ecological validity. With our game, we want to explore the merits of paradigmatic pluralism for learning in the climate crisis and develop resilience.

A starter kit will be available. If you are interested, please email us:
floorbasten@orleon.nl
marc.coenders@mondiaalleren.nl

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APPENDIX: QUESTIONS USED IN THE END GAME

The speculative

- What is the core of a future-proof roadmap?
- In the 1960s people longed for the Aquarius era, to what extent are today's crises just a phase towards a better world?
- Chinese wisdom literature speaks of an era of great equality (Ta Toeng), what would a society based on equality look like?
- What if our idea of evolution is wrong and apes were the next step in human development?
- How can we rethink individualism from the perspective of entanglement in a more-than-human-world?
- How could Artificial Intelligence help us to create healthy ecologies?

The Mythic

- How do you think mythology (from all over the world) is intertwined with today's civilization?
- What do you think is the significance of hunting for the development of human civilization?
- How did early man develop from a prey creature to a predator?
- What is the problem with the following statement: Weakened and torn by the division between man and woman, human beings have been seeking their other half ever since?
- Imagine the elements were gods. How would we tread Earth if this were true?
- Typical Western stories have a plot development. To what extend does the need for a plot limit our imagination?

The Global

- Compare the use of nouns and verbs in name giving. What differences do you experience between “the Rhine” and “That which is the Rhine”? How would you address Rhine-related issues from the second perspective?
- In what way does history relate to sacredness?
- How would you mediate between the human and non-human world?
- Explain how the history of a place is relevant for its future in at least three ways.
- In what ways is decolonization a prerogative term?
- How can the notion of interconnectivity enhance being part of what Paul Hawken called ‘Blessed Unrest’?

The Transdisciplinary

- How do you know what’s it like to be a bat? Or a termite?

- How do we learn to understand the language of mushrooms? Why would we?
- Alexander von Humboldt combined measurement with how the world appeared to him, in other words objectivity and subjectivity. What modes of representation or communication fit this double-layered message?
- How do we creatively use non-essentialism, for instance in hybrids?
- How can the theatre term ‘the fourth screen’ help us to develop an epistemology of participative experience?
- Whanganui river is in a terrible state. Who would you invite to explore possible solutions?

The Activist

- Is human interference always destructive? What examples do you have of co-creative human interference?
- How can we represent non-human stakeholders in a productive way?
- What types of non-human activism do you know?
- How can our co-species strategically inform us and how do we hear what they have to say?
- In what way can totems become co-protesters?
- What did Alice Walker mean when she said: ‘Activism is my rent for living on the planet’?

The Democratic

- What does plant and animal-based literacy look like?
- Animal speech is more common in indigenous cultures, to what extent is this communication reliable?
- To what extend is the European Union democratic?
- How can we represent the interest of things other than in terms of our own interests?
- Whanganui is a large river in New Zealand. It is also a legal entity and as such has a legal status with rights attached. Man acts as its legal guardian. What is the problem with this representative model?
- Finish the following sentence: a populist movement could increase democracy because …

Climate Dystopian Cocktail Hour

SARAH BROOKS, *IBM*
MEGHAN L. MCGRATH, *IBM*

If anything is resilient, it's the cocktail/coffee hour. Join us in the post-post-climate dystopian future, where you can swap business cards amidst the smoldering ruins of civilization. We'll socialize and participate in an imagined future informed by research-based signals/trends around climate change and dwindling non-renewable resources. We'll co-create beverages and snacks in a world in which many of the key crops of 2022 are no longer available and creative substitutions have to be made: What is the climate dystopian version of the cheese board, cocktail napkins, or small talk? How will human rituals morph and shift, but somehow carry on as the world dramatically changes? And we'll generate useful conversations about the next steps for our teams and organizations as we explore possible futures.

Building for Resilience

PREETI TALWAI, *Google*
KEITA WANGARI, *Google*
LUCA PAULINA, *Google*

Too often in complex, resource-constrained and fast-paced organizational environments we design only for the ideal "happy paths"—human journeys get watered down and nuance is pushed to the side. It's imperative that organizations support the inevitable changes of real life so they can build enduring relationships with the people they serve. In this workshop we'll build language and tools to re-engage organizations with the messiness, grit and reality of actual life journeys. We'll walk through an exercise to view human journeys with a "resilience lens" and examine how products and services can be designed to learn and adapt to change. Participants will take away a set of tools to build more robust experiences by anticipating opportunities, mitigating harms, and designing for dynamism.