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Mapping Future Oriented Design Practices

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Emerging technologies spur collective imagination about futures that are yet to come. Visions of these futures highlight promises and perils of emerging technologies poised to change society radically. In addition to emerging technologies, precarity as the 21st-century condition informs how futures are made. This joins the broader call for a care movement to respond to precarity. While there is a growing body of work building on care ethics in the field of design, the application of such theoretical concepts has been limited. I draw on data from an ethnographic field study of emerging design practices in the Silicon Valley research and development division of a multi-national technology company for investigating emerging future-oriented design practices. The case studies highlight the increasing prominence of futures thinking and systems thinking, which reflects the increasing complexity of challenges the company aims to address while showcasing the lack of capacity to think with/through/for care. I argue that cultivating care as a core component of future-oriented design practices can increase accountability and responsibility. Building on feminist care ethics, I propose that designers embrace what I term *vital futures:* futures that are preoccupied with repairing, maintaining and continuing our world so we can live in it as well as possible.

KEYWORDS: systemic design, futures thinking, foresight, care ethics

RSD TOPIC(S): Cases & Practice, Sociotechnical Systems

Presentation description

An increasing number of design practitioners, scholars and educators position design to contribute to addressing macro-level societal issues such as climate change, healthcare, displacement, public policy, food security and urban mobility. Scholars and practitioners call for reformulating design to adapt to the 21st century in order to address these large-scale systemic challenges (Irwin, 2015; Teixeira, 2017; Norman & Stappers, 2015; Jones, 2017) and to contribute to the public good (Junginger, 2018). The orientation towards societal issues broadens the scope of design both temporally and spatially: designing for systemic change involves taking more stakeholders beyond the individual user into consideration, both human and nonhuman, and thinking about the long-term effects of the intervention. However, in many technology organisations, future visions merely extend the current condition to the future without challenging dominant paradigms, hence colonising the future with the present (Adam & Groves, 2007).

Precarity is one of the aspects that define the current condition. Pulcini (2020) explains precariousness as a profound and objective uncertainty over the future to the extent that "there will be no future" becomes a dominant vision. Similarly, Tony Fry (1999, p.10) argues that defuturing, as the negation of world futures, is "a key characteristic of our anthropocentricity". Recognising precarity as the condition of global vulnerability and uncertainty that designers are implicated in (Light et al., 2017) helps us extend our responsibility beyond the human and the present. Drawing on feminist care ethics, I argue that the conceptualisation of 'care' provides a lens to develop a framework for future-oriented responsibility in design. If design is seen as giving form to futures (Mazé, 2016), cultivating care in design practices could help alternative futures to flourish. This research seeks to respond to the broader call for a care movement to respond to precarity. While there is a growing body of work around care ethics in the field of design, the application of such concepts in technology design remains challenging. Through this research, I ask: how might emerging design practices involved in developing applications of emerging technologies embed care? Or in other words, how can emerging technologies be designed with care?

Method and findings

To address these questions, I draw on data from an ethnographic study of emerging design practices in the Silicon Valley research and development division of a multinational technology company. I adopted an exploratory case study methodology for understanding future-oriented emerging design practices that are primarily concerned with new and emerging technologies. The case studies highlight the increasing prominence of futures thinking and systems thinking within the organisation.

Growing scale and the complexity of the challenges the company seeks to address, such as decarbonisation, urban mobility and manufacturing automation, call for changing R&D strategy to expand the scope of their offering to include comprehensive solutions to foster systems-level change rather than advancing discrete technologies. While products also rely on a vast infrastructure, the term solution intentionally expands the scope of the offering not only to include interconnected systems that make a solution possible but also the continuous and open-ended process that is often "messy". Instead of closed models of innovation based on a linear pipeline, outside-in innovation is predicated on collaboration between multiple stakeholders and continuous relationship building. This approach necessitates the relationship between the company and its customers to be dynamic, collaborative and long-term instead of transactional and short-term. Within this context, crafting long-term visions help cultivate partnerships for systems-level transformation orient efforts in the present and align internal and external stakeholders.

Drawing on Kimbell's conceptualisation of design-as-practice (2009), I broadly define future-oriented design practices as "habitual, possibly rule governed, often shared, routinized, conscious or unconscious, … embodied and situated" actions that are primarily concerned with future making. Future-oriented design practices are embedded within a broader and denser texture of design practices. Mapping these practices show existing and emergent patterns of organising. Organisational boundaries come to the foreground by tracing the connections between future-oriented design practices and how visions of desirable futures are circulated, harnessed and (re)produced. Sociotechnical imaginaries, as "collectively held, institutionally stabilized, and publicly performed visions of desirable futures" (Kim & Jasanoff, 2015, p. 322), are

effects of future-making practices on a societal level, and they become embedded in the texture of innovation practices that span organisational boundaries. They are instrumentalised to claim a stake in an almost-here future. Sociotechnical imaginaries are harnessed to inform funding, launch new research programs and mobilise stakeholders. Therefore, sociotechnical imaginaries are not static descriptions of "the future" but living visions that embed ambitions, desires and fears through continuous practices of (re)production. In order to foster alternative futures that centre care, designers should challenge dominant sociotechnical imaginaries based on the premise of linear technoscientific change.

Conclusion

Approaches such as speculative and critical design, design fiction, and experiential futures offer tools and methods to catch a glimpse of an otherwise future. Yet, the integration of such approaches to innovation practices in technology organisations has been limited. Mapping future-oriented design practices highlight the limited capacity to think with/for/through futures with care in the research and development division of companies. Practices that centre care are often invisible and undervalued. Case studies show that care-oriented design practices that engage with futures critically and generatively are already emerging, albeit in the margins. The impact of these practices is limited in scale, yet they can be powerful to mobilise action. Building on feminist care ethics, I propose that in order to address precarity design, practitioners in technology organisations should embrace what I term *vital futures* that centre care as an ethicopolitical commitment to "maintain, continue, and repair our 'world' so that we can live in it as well as possible" (Fisher & Tronto, 1990; de La Bellacasa, 2017).

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