Futures in Things

Locating the Promise of Infrastructures in Public Libraries

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Public libraries in the U.S. and around the world are rapidly changing due expanding technological and social needs of their communities. The Covid-19 pandemic has intensified the debates about the future of public spaces and public services. In this paper, we report on a qualitative study of librarians in a U.S. urban public library system. The focus of the study was to understand how the concept of "the future of library" is constructed and contested both socially and materially. Using mixed methods, including participant observation, interviews, participatory design and action research, we developed insights about the socio-political dynamics of futures in a public infrastructure. We argue that futures can be shaped not only by socio-technical imaginaries, and representations, which tend to be abstract and distant, but also by socio-material conditions in the present. Specifically, drawing on the work of infrastructure studies, we show how specific objects of librarians can be used to construct and impose a particular version of the future with which librarians have wrestle and to which they have to respond. In this paper, we focus on three examples in the public library: the circulation desk, the bookshelf, and the self-check machine to show how they instantiate narratives and expectations about the future of libraries. During our study, these objects were redesigned as part of ongoing library renovations. The traditional circulation desk was changed to a small pod, thereby changing the embodied experience of librarians and setting up new kinds of interactions and expectations between librarians, the patrons and library space. The traditional stacks were replaced by smaller movable bookshelves making the space more configurable and more adaptable to future needs of the library. The new self-check machine ascribed a set of values to the labor of librarians and introduced new management practices. Based on this argument, that the futures are socio-material and infrastructural, we propose strategies for researchers who study the future and contribute to the growing body of research in anticipatory ethnography.

INTRODUCTION

In recent years, ethnographic researchers within and outside of industry have been adopting futures-oriented and anticipatory methods. These approaches have been inspired by methodological and theoretical advances in design ethnography including such as speculative and critical design (SCD) as well as in futures studies such as experiential futures.(Candy, 2010) These methods can provide an alternative and generative perspectives to problems, systems, and underlying values, which can be useful in examining dominant narratives and making space for new ones. Creating alternative representations of the future is one of the key tenets of these methods. These representations could be in the form of stories, objects or bodily enactments. (Sanders & Stappers, 2014) The goal of these representations is to create a kind of a social and material break from the constraints of the present and to explore alternatives futures outside of questions of practicality and technical feasibility. However, what gets often overlooked in these methods is the socially, materially, and politically constructed nature of temporality itself. That is, how the future emerges from an everyday entanglement of people, things and places and the distribution of power among them. This is especially relevant when the site in question is a large-scale infrastructure where such entanglements take place at multiple scales and temporalities. How might we understand the emergence of alternative futures in everyday experience? What

methodological approaches would allow us to study these futures? What insights can we draw about anticipatory design ethnography? In this paper, we report on a qualitative study that shed light on these research questions.

Our research is based on a qualitative mixed methods study conducted in an urban public library system the Atlanta metro area of Georgia, USA. Drawing from the infrastructure studies and the concept of infrastructuring, we argue that futures are socio-material. Specifically, we examine three objects in the public library infrastructure, the the bookshelf, the circulation desk, and the self-check machine, and demonstrate how they shape and frame futures through relations and discourses that they enable. These socio-material relations include, among other things, enacting management policies, regulating the bodies of librarians and assigning value to their labor today and in the future. Based on these findings we propose strategies for researchers and practitioners of anticipatory ethnography to explore alternative futures and expand the tools of speculative and critical design.

ETHNOGRAPHY, FUTURES & DESIGN: COMMON TRAJECTORIES

As we face a whole range of complex socio-technical changes at various level of scale, from atomic and sub-atomic, to planetary and extraterrestrial, understanding how people and their communities experience and wrestle with emerging futures has become point of interest among anthropologists and ethnographic practitioners. Some have argued that since Margaret Mead, who was one of the founding members of the World Future Society, wrote A Note on Contributions of Anthropology to the Science of the Future in 1971, ethnographic methods have not kept up with the future-oriented shift. (Pink & Salazar, 2017) However, in recent years, a whole range of methodological and theoretical perspective have emerged in design, anthropology, futures studies, science and technology studies and others, that provide useful insight into how futures come to be, and what impact they have on everyday life. In design, speculation about and critique of the future through material engagement has produce novel ways to produce knowledge and, in some cases, debate about futures (Dunne & Raby, 2013). Similarly, in futures studies, which as been traditionally concerned with creating and studying alternative narratives and representations about the future (Polak, 1973), new approaches have been proposed to bridge the "experiential gulf" between the distant imaginary futures and everyday experience. (Candy, 2010) Researchers have also used representation of temporality itself. One example is the futures cone (Voros, 2003) which both challenges the idea of linear progress of the future but has also been critiqued for its Western-oriented bias. (Kozubaev et al., 2020) Another example is the 10,000 year clock proposed by Stuart Brand and is advocated by the Long Now Foundation. (Brand) Extending the time horizon is a one way the future can be challenged and reconceptualized.

There have also been approaches in design anthropology that are focused less on the distant nature of the future and more on the future that is "always already here, as a continuous unfolding of the past and present." (Kjærsgaard et al., 2016) Thus, from a methodological standpoint, there is a tension between the common framing of the future as distant and fictive, and the traditional focus on ethnography on the present and situated experience. Lindley et al propose anticipatory ethnography as one theoretical and practical approach to resolve this tension. They argue that design fiction can serve as input to design ethnography. (Joseph, Sharma, & Potts, 2014)   Specifically, the use of *diegetic prototypes*, or

objects as storytelling devices, to suspend disbelief, can be useful in creating an insightful dialogue about the future.

While the use of fictional objects and things is common in speculative design and design fiction, another set of perspectives call for a closer attention to the role things play in shaping futures. Giaccardi et al argue for an approach that takes not only a perspective of a human but also a perspective of a thing. (Giaccardi, Speed, Cila, & Caldwell, 2016, p. 235). This requires taking seriously the idea that things are also actants. Seeing and understanding the world through everyday objects like a kettle, a fridge, or a cup, can challenge anthropocentric assumptions about how the world works, including how the future unfolds. Giaccardi et al frame everyday objects as potential co-ethnographers that can help reveal new insights. Another related perspective comes from infrastructure studies where the focus is not on individual things but on socio-material relations that they enable over time. This point of view helped frame the concept of *infrastructuring* which is a process of attending to relations that technologies enable. (Star & Ruhleder, 1996) In other words, we can understand how things around us shape relations through infrastructures, including how we experience futures and temporality. In large and complex infrastructures, this can occur at different scales and times. For example, Anand et al argue that infrastructures have a promissory quality. Roads, bridges, and other large infrastructural projects are not only used in discourses around brighter and better futures but are also promissory in themselves as they mobilize resources and shape socio-temporal, socio-political, and socio material relations. (Appel, Anand, & Gupta, 2018). It is with this perspective in mind that we developed our research and findings. That is, how things, such as a circulation desk or a bookshelf, in everyday experience serve as actants on the future in everyday experience, and what methodological implications this has on locating and interrogating alternative futures.

CONTEXT AND METHOD

We provide a detailed ethnographic account and methodology of our research elsewhere. (Kozubaev & DiSalvo, 2021) In this section, we briefly outline some of the key facts about our research site, participants and methods used. We engaged with the Fulton County Library System (FCLS), an urban library system with over 30 branches in the Atlanta metro area in the state of Georgia USA. Our collaboration with the library began in late 2018 and lasted approximately two years. At this time, the library was undergoing a significant capital improvement project which involved renovating all its old branches including the central library in downtown Atlanta, and the construction of several new branches. As part of this process, the library administration, librarians, and the communities they served were engaged in public discussions and design process. Part of this process included imagining a new future for libraries. These discussions were part of a broader debate within the professional librarian community about the future of the profession and the institution. (Chowdhury, Poulter, & McMenemy, 2006; Kozubaev & Di Salvo, 2020; Peet & Yorio, 2018) For example, since 2013 the American Library Association (ALA), has invested in the Center for the Future of Libraries, which seeks to "brings together library experts and innovators to explore the profession's many futures by focusing on emerging trends." (American Library Association, n.d.) Over the course of two years, we engaged with FCLS through volunteering, conducting speculative design workshops, participant observations and in-depth interviews. We also participated in public hearings at branch libraries where

architects, library administrators and community members discussed renovation plans, design decision and future use of libraries. In all these engagements, we tried to identify and document how the future of libraries is imagined, contested, and experienced by members of this professional community. In particular, we focused on the work practices of librarians rather than patrons. This aspect of library futures often gets overlooked and more attention is paid to how the library should provide more value and services for patrons. In fact, in popular press and public discourse, libraries are often framed as out-of-date, slow, or even irrelevant. Thus, focusing on the work of librarians, allows us to see the hidden, infrastructural aspects of how library futures are made.

FUTURES IN THINGS

We uncovered several themes and insights about the relationship between library infrastructures and futures. In prior research, we described how the work of librarians shape infrastructures by expanding their services beyond books through programming and outreach, how libraries can be sites of political activity and contestation, and how librarians navigate the tensions between the forces of market logics and its commitment to being an open, free and inclusive space. (Kozubaev & DiSalvo, 2021) What we uncovered and observed were a whole range of discourses, practices and entanglements that shape and negotiate emerging library futures in messy and subtle ways. The most interesting and unexpected of them were the role of ordinary but infrastructurally crucial objects. Next, we will discuss three such objects that stood out: the bookshelf, the circulation desk, and the self-check machine. These objects are central to the everyday work of librarians and the library space in a mundane and somewhat invisible way. What we will show, is that these objects also enact futures through the relations they enable and the role they play in discourse about library futures.

THE BOOKSHELF

One of the key features of the newly renovated libraries is that the traditional permanent stacks are being replaced by shorter bookshelves that are also on wheels. The reason for this design choice is that future of library space is framed as flexible. Smaller bookshelves on wheels allows the staff to reconfigure the space quickly and easily. In public meetings, we heard several such justifications for this decision including: *"One of the things we tried to do is to make the space flexible"* or *"All the furniture is on wheels including... There is an opportunity to use the space differently."* The movable bookcase sets an expectation that the library space is not just for books and that space should be used in other ways. The second design choice is the height of the bookshelves. The height of the old stacks was 90 inches (229 cm) and the new bookshelves would be up to 66 inches (168 cm). Architects explained that this design provides an increased sense of openness in the library, and that librarians can visually monitor the patrons. In other words, it is also a surveillance feature. Here are some examples of such explanations from our field notes from public meetings: *"The whole space will be much more open. You can look in and see activity in the library." – Meeting 7. "Again, the idea is to have spaces as open as possible. To give the librarians the opportunity to see what's going on. We organized the shelves so that the librarian can see all the way down through the shelves."– Meeting 6.*

This future was not welcomed by everyone and was sometimes contested. One of the tensions that the new bookshelves create is between the size of the physical book collection and available floor space. During public hearings, one of the common questions that community members asked was whether and how many books the library is going to lose as a result of the renovation. For small local libraries, book collections are valued not just as a source of information, but as a source of community identity. (McKenzie, Prigoda, Clement, & McKechnie, 2007). Responding to these questions, the architects and library administration explained that the new shelving is more efficient, and in fact, the top and bottom shelves of the existing stacks are underutilized, because they are harder to reach. The new shelving system became a point of contestation among different stakeholder groups about what the future of library is about. There were some who believed that in the future books should play at least as important a role as it has in the past, and thus a perceived reduction of shelving would prevent that future. At the same time, the idea of a library space as "open" and "flexible" suggests that in fact what the library is about is unknown and the choice of the new shelving is a coping strategy with that uncertainty. We heard this sentiment in our conversations with librarians and it is illustrated by this remark made by one library administrator at a meeting. *"We have to have the ability, if in 2 years if this space doesn't work, we have to be able to adapt without more money. You'll see its flexibility and versatility to meet the changing needs." – Meeting 3.* Thus, the bookshelf as an object is a kind of an agent of the future while at the same time is an indication of broader socio-economic forces with which library administrators and workers have to contend.

THE CIRCULATION DESK

The circulation desk (aka the circ desk) is usually accessible and visible from the main entrance to the library. In its traditional configuration the desk is behind a barrier, like a bar stand. A key feature of the renovations is that the traditional circulation desks are replaced by small, movable pods design for a single library worker. In one meeting one of the representatives explained the reason behind this transition as follows. *"The staff gets an opportunity to circulate and be among patrons as opposed to staying in one location. That's on wheels as well. you can unplug it and move it. You can turn it in a different direction." – Meeting 3.* The other reason for this transition is to free up floor space for some of the new amenities like the new meeting rooms. But there is also a broader narrative behind this design choice, which is the idea that librarians should be interacting more with people and spend less time on simple transactions like checking out book, which are considered not as valuable. Furthermore, circulation desks, it is argued, create a physical barrier between patrons and librarians which is not conducive for human interaction. Like the movable bookshelves, the pod also reinforces library futures as flexible spaces. But unlike the bookshelves, the pod constructs this future through librarians' bodily position and experience.

However, librarians we spoke to pointed out some of the concerns of this design. First, desks don't prevent librarians from interacting with their patrons. Second, providing a sense of authority and power can be beneficial to the work of the librarians and being physically exposed has its dangers as well. Here a librarian explains her experience in an interview:
"Well, you know what, sometimes you don't want to be down there with them [the patrons]. You need to know what you're talking about. And especially me as a small woman, there are a lot of people that will push me around and I get pushed sometimes. There are a lot of times when I know what I'm standing on and

I know my library work and I know what I'm talking about. And I feel a lot more secure being behind that little desk." – Participant 15

This last point about feeling secure brings up how design decisions in the library be based on certain gendered notions like "openness" and "being connected to the patrons" that overlook some of the dangers of a profession the majority of which consists of women. Our participants noted that working behind a small pod in the middle of a room can leave them exposed. *"It's mostly women here… We'll have someone come up and touch us on the arm or to be frank, look at our a**es all day from wherever they're seated. But having something that keeps you at bay, not at bay, but keeps the eyeballs from looking at you all day or people coming up behind you, this is going to be stressful." – Participant 6.*

THE SELF-CHECK MACHINE

Library renovations introduce another new piece of equipment, self-check machines that allow patrons to check out several books at once. They are considered an important tool in relieving the librarians of tasks that can be easily automated and therefore not valuable.

"Typically, it's [book check out interaction] just transactional. The sort of interactions that we want staff to have with the public are higher value interactions than that. So rather than checking an item out, we would want a staff member to show the patron how to check on their own. To walk with them in the stacks to an item that they are asked about, to have more face-to-face interactions because they don't feel like they have to be at the desk to check an item out" – Partiticapnt 3

These machines shape librarian's future work in ways that are more "valuable" to the patrons. Librarians are encouraged to teach patrons to use self-check machines, and library management sets targets on what percentage of such transactions should be automated. Thus, the machine is at once a future shaping device and a compliance mechanism to ensure that the officially preferred future is achieved. But using self-check machines present unique challenges in each community. Indeed, in some cases and for certain demographics, using self-check machines without ever interacting with a librarian is convenient and preferable. But for other, more technologically challenged audiences the machines can be an obstacle.

"A lot of my time will be spent explaining how to use self-checkout because again, the digital divide, people are not that comfortable with computers." – Participant 5. So librarians create their own strategies to both comply with the management vision and to ensure that their patrons are served well. Sometimes, these goals conflict with each other. One librarian told us that because her branch has an older demographic, they were planning to station one of the most experienced and most popular librarians next to the self-check machine so that older patrons don't get intimidated by it. From the perspective of the patron, this arrangement would replicate the experience of a traditional circulation desk. From the perspective of the librarian, it would help comply with management's goals of increasing the use of self-check machines. Most importantly, framing the book check-out interaction as less valuable overlooks other vital but less measurable value of interacting with a librarian. What some might consider trivial "chit-chat", in fact plays an important social and cultural function, especially in smaller local branch libraries, where interpersonal communication is a building block of a public sphere. (Wood, 2020)

The above examples demonstrate how techno-scientific visions of future can be materialized and embedded in the everyday object and experience of librarians. These objects, though discrete and mundane, are part of library infrastructures and shape relations

between people, things and places. As we have seen, in some cases these objects can frame and legitimize particular futures. In others, they can become points of contestation, resistance and sources of alternative futures.

STRATEGIES FOR ANTICIPATION THROUGH THINGS

A common strategy for reflecting on and studying the future is through fictional narratives, representations and things, that is through speculation. From an ethnographic standpoint, it often means studying some sort of an intervention of these fictional artifacts and representations into everyday experience. What we have shown in our examples, is that futures can also emerge from and be shaped by objects, especially in large scale infrastructures. In this section we propose two methodological strategies that begin from the premise that futures are part of the everyday experience, they emerge without any interventions and they can be enacted and shaped by things rather humans.

Strategy 1: Locate Anticipatory Dynamics and Temporalities in Infrastructures

A key aim of futures studies and speculative design is to challenge dominant frameworks of meaning and generate alternative possibilities. For example, Milojevic and Inayatullah argue that the notion of "alternative futures" can be seen as fundamentally transformative, and capable of bringing about social change. (Milojevic & Inayatullah, 2015) Thus, the very act of conceiving and representing alternative futures, affords a certain kind of agency to change one's condition, at least potentially. However, as we have shown in our analysis, FCLS alternative futures are contingent upon the infrastructures in which they originate. First, there is the issue of power relations which determine who gets to propose and legitimate the future and what becomes "the official future." For example, the library management sets the vision of the future which is enacted through administration and policies. Second, perhaps more important, is the socio-materiality of infrastructures itself, which shapes what futures are possible and how they unfold. What does it mean to study futures and propose alternative futures when the very conditions under which the futures are made have existing futures both visible and invisible? In other words, when futures are introduced into infrastructures, such as through design interventions, workshops, art installations etc., they come into contact and are influenced by futures that are already there. This calls for a closer examination of the claims futures methods and other closely aligned ethnographic methods (both academic and professional) regarding their capacity to challenge dominant narratives.

One implication is that futures practice and research need to focus on locating existing futures embedded in infrastructures. This requires a more nuanced understanding of socio-material relations in a given community or place and how they shape temporality. A distinctive trait of infrastructures is the fact that relations are layered over time and become gradually less visible. One aspect of locating the temporalities of infrastructure is tracing those complex histories that determine or otherwise influence temporalities in the present. Bowker proposes that mapping temporalities of infrastructures can provide "ways of escaping the dead weight of progressivist historiography." (Bowker, 2015) From the

perspective of futures studies, this can be useful in identifying temporal trajectories that were set in the past and that continue today.

The second aspect of locating temporalities is mapping how infrastructure orients actors towards the future. In other words, identifying how infrastructure promises particular kinds of futures and foreclose others through socio-material relations that they enable. This kind of analysis sets up a different role for futures studies where the aim is not to forecast and describe distant alternative futures, such as by representing it or by making open to experience (Candy, 2010), but to describe the futures shaped by the infrastructure in the present. Once this is achieved, we can begin to examine the extent to which alternative futures can be produced by engaging with those temporalities rather than breaking away from them. It is not about generating alternative futures in the distance, but about exploring the limits and opportunities for human and non-human agency in producing alternative futures within existing socio-material relations. Since it is difficult, if not impossible, for any one actor to completely change infrastructures, shaping alternative futures in infrastructures implies creating adjacent futures that co-exist and interact with futures that are already there.

Finally, examining infrastructures to locate futures necessitates another, perhaps even more fundamental skill for ethnographic researchers which is attending to objects. That is to say, in order to articulate the socio-materiality of futures, as I have described above, one needs to account for objects, including their materiality and agency, from the object's perspective. What does the bookshelf want? What does the self-check machine see? What future does the circulation desk promise? Taking these kinds of questions seriously can help us articulate alternative ways futures unfold in ways that are not anthropocentric, but center things as actants themselves. Furthermore, they can help us locate futures without relying on fiction and intervention, which can often privilege the researcher or designer as the arbiter and author of futures, even in cases where the process strives to be participatory and inclusive.

Strategy 2: Use Things To Diversify Temporal Representations

One way futures-oriented anticipatory methods distinguish themselves is by focusing on a longer time horizon. Considering decades, centuries or millennia allows one to frame challenges in a way that include larger systems and broader implications (societies, continents, entire planet etc.). One common representation that has been used by design anthropologists is the Voros cone. We have written about its uses and shortcoming elsewhere. (Kozubaev et al., 2020) In this paper we will draw from another representation of temporality based on the work of Stuart Brand and the Long Now. The goal of the Long Now Foundation (LNF) is "to provide a counterpoint to today's accelerating culture and help make long-term thinking more common." (Brand, n.d.) The key premise of this approach is what humans perceive as "now" is a very narrow temporal scale, ranging from this very second to a few days. According to Brand, the challenges of our time stem not from mere selfishness but from a myopic view of time itself. Brand and his collaborators proposed extending "the now" to a much longer time scale, namely ten thousand years, so as to expand our capacity to tackle issues of greater societal and planetary concern. One of the strategies LNF uses is to change cultural representations of time. For example, members of LNF represent the year of a date with an added "0" at the beginning (e.g. the year 2020 would be 02020) drawing attention to the fact that how we represent time is a matter of

cultural convention and convenience and that there are longer time scales. Another project of LNF the 10,000 Year Clock, a clock built into a mountain in western Texas. It is designed to work for 10,000 years without human intervention. Aside from being a unique engineering, design and fabrication challenge, it is intended to make a cultural impact "to be a symbol, an icon for long-term thinking." (Bezos, n.d.)

Implicit in this approach to temporality is the belief that there are multiple levels or layers of temporality that one can organize in a hierarchy. To frame and solve problems at the appropriate scale one has to, in a way, match the temporality of that scale. Brand calls this *pace layering.*

In this mode, the outermost layer is "Fashion", which operates on in the most rapid temporality. Fashion tastes change rapidly and unpredictably. The innermost layer is "Nature" and has the slowest (or longest) temporality. According to Brand, the relationship between the layers is that of reinforcement and sustainment. *"In a healthy society each level is allowed to operate at its own pace, safely sustained by the slower levels below and kept invigorated by the livelier levels above."* (Brand, 1999, p. 36) Pace layering can be useful in thinking about longer and shorter temporalities and can be applied in a variety of contexts. For example, Brand applied a variation of the pace layering model to demonstrate how temporalities in a building nest into each other from the level of an individual object to the site on which the building stands.

However, there are also some shortcomings in this model. First, pace layering and other similar approaches to representing temporality, tend to treat it as a given and, in some way, inherent to a specific scale: Nature is long term, Fashion is fast, infrastructure takes a long time, and so on. In addition, it systematizes temporalities in a fixed hierarchy that doesn't reflect everyday experience, and also depends on the nature-culture duality that is problematic.

As I argued above, multiple temporalities can be embedded in and framed by the socio-materiality of infrastructures. FCLS infrastructures impose and promise certain futures encouraging, and sometimes forcing librarians to be and act one way or another. At the same time, librarians intervene into these temporalities and create pathways for alternative futures to emerge by attending to socio-material relations and creating new ones (i.e. infrastructuring). Therefore, a more accurate way to think about infrastructures is not as marker of a distinct temporality, but as a set of relations that can orient us to different temporalities at the same time. Nature can be experienced as fast, slow or even unchanging depending on the infrastructures through which actors relate to it. The same could be said about fashion. In other words, temporalities are infrastructure-dependent and, like infrastructures themselves, they are relational. We have seen this in the work of librarians. Librarian's everyday experience can be fast-paced and overwhelming. At the same time, these infrastructures can be slow and resistant to change. The Dewey Decimal system of classification, despite its many shortcomings including lack of versatility and a cultural bias, remains the most common system of organizing information in public libraries. (Drabinski, 2008) Furthermore, because many public libraries are part of a local government bureaucracy, they are tied to funding, management, legislative and other infrastructures, that take years, if not decades to change. Therefore, it is important for futures researchers and practitioners to represent temporality in more diverse ways that account for the socio-materiality and socio-politics of futures more comprehensively than established cultural

conventions. (Kozubaev et al., 2020) Taking temporality as a given, either by using some of the common methods and representation that I described here or by not attending to it at all, undermines the very openness and generativity that anticipatory ethnographic methods aspire to achieve.

CONCLUSION

In this paper, we explored how things shape and act on futures on the example of library infrastructures. As evidence for our argument, we used three objects from library infrastructures which we studied using mixed qualitative methods. The three objects, the stacks, the circ desk and the self-check machines, helped us uncover how futures unfold in everyday experience of libraries and how they act on temporality in various ways. Furthermore, we demonstrated how these objects play a role in broader library infrastructure by, for example, enacting management policies, regulating the bodies of librarians and assigning value to labor. Using these insights, we then proposed two methodological strategies for studying and challenging futures. The first is to *Locate Anticipatory Dynamics and Temporalities in Infrastructure,* which requires researchers to attend to the socio-materiality of futures and objects. The second is to *Use Things To Diversify Temporal Representations,* which calls for alternative approaches to understanding and conceptualizing temporality by reference to the things create them in everyday experience. By articulating these strategies, we contribute to the ongoing research and practice in anticipatory ethnography. We hope that practitioners of these methods continue to expand the methodological and epistemological diversity in generating, studying and creating futures.

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