Terra Incognita

NYC

A New_ Public Project

Mapping New York City's
New Digital Public Spaces
During the COVID-19 Outbreak

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Acknowledgements

This report is concerned with the digital space of New York City during the COVID-19 pandemic. One of its most important findings is that the digital city, in fact, reinforces the physical city.

Yet this finding rings hollow, however, without acknowledging and reckoning with the genocide, erasure, and the forced removal of the peoples on whose land this city was built. New York City, with all its vibrancy and diversity, remains a colonial space. And it is imperative to build mindfulness of our participation in this colonial space, and to acknowledge that this city was built on the unceded land of the Lanápe peoples[1]. Committing to dismantling the violent legacies of settler colonialism also means committing to the Black Lives Matter movement, and the ongoing project to tackle white privilege and systemic racism in our city, in our communities, and in our institutions. I hope that this report, in whatever small part, can be read with such intentions, and even as a contribution to this commitment.

This project would not have been possible without the generous support—in more than one way—of the Civic Signals team, in particular Eli Pariser and Neelam Sakaria, as well as Romy Nehme. Their commitment to this project extends beyond financial support. Their enthusiasm, curiosity, and flexibility have made this project possible, and I extend my biggest thanks to them. A very great thanks also goes to Dr. Jordan Kraemer, who so generously steered this project as co-captain, and who provided invaluable experience and dedication, both to the craft of digital ethnography and that of writing. This ambitious project would not have come together in the same way without her contribution, and it is as much hers as it is mine.

To the *Terra Incognita NYC* research team—Myrtle Jones, Amelia Fortunato, Ola Galal, Nathan Madson, and Stephen F. Sullivan—I offer great thanks. The stories in this report are the stories they collected, as they immersed themselves deeply into the digital city of NYC. Their professionalism and scholarly rigour is exceptional. A grateful thanks, of course, to the people who open their digital doors to us. The spaces in here are their spaces.

I also want to thank Ben Platt for his exceptional skill in taming this document, which had doubled in size and complexity as we delved deeper into the data, and for his dedicated support. The most elegant sentences and transitions in here are his. I also owe my sincerest thanks to friends and colleagues who so generously offered their comments on earlier drafts of this document. NYU must also be thanked for their steadfast support of this dynamic project.

If I can take the liberty of dedicating such a collaborative project to anyone, then I want to dedicate it to the extraordinary people of New York City. They have, and always will, persevere.

Mona Sloane
New York City
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1 For more information on native land and governance, visit the Native Governance Center

Executive Summary

What is the Project?

Terra Incognita NYC maps how digital public space emerged in New York City during the COVID-19 pandemic. This report examines how, in the summer of 2020, local communities in NYC's five boroughs maintained social ties and interaction despite social-distancing mandates; how these interactions and spaces were mediated by technologies; and how, together, this constituted digital public space.

The outbreak of COVID-19 shifted how we live and work as individuals. It also had a profound effect on how we connect as communities. The prescribed isolation, in an abrupt way, moved most of our social interactions online.

This digital move made people take deeper roots locally, connecting them more to their neighborhoods through physical presence, but also more local social interaction, albeit online. In this sense, the digital opened the door to a wider world; and yet, the digital was mostly employed to deepen local communities. This could be seen in the nine elements that made up NYC's digital public space: curation, membership, publicness, safety, locality, affordances, infrastructure, intimacy, and temporality.

As this shift happened, we saw the escalated impact of well-known physical and digital issues: reliance on private infrastructure, racialized policing of public space, the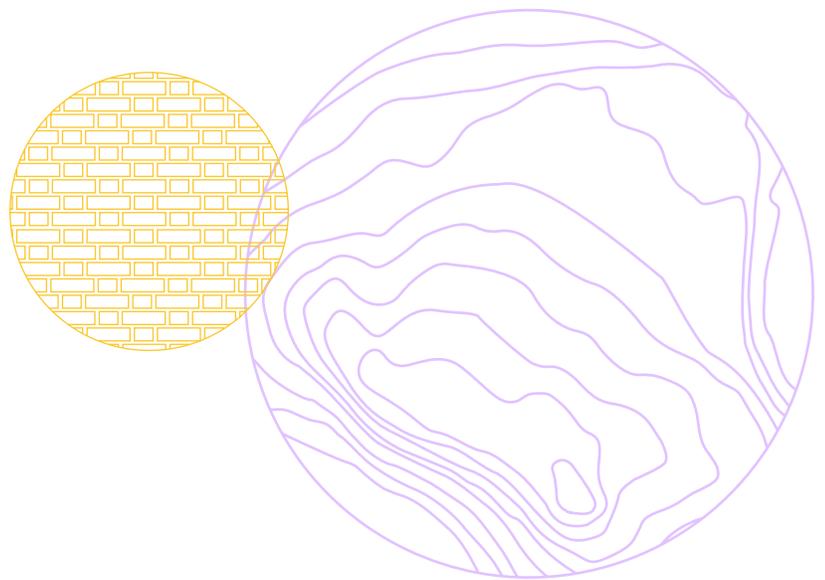 (digital) divide, harassment, disproportion-ately impacted communities and individuals, political polarization, and so on. These occurred along the intersecting fault lines of race, class, gender, age, religion, and sexuality. This is the biggest revelation of Terra Incognita NYC: the digital city, for better and for worse, actually reinforced the physical city.

First, in the METHODOLOGY section, we introduce the study, the research tools we used, and the conceptual framing we applied. Next, in PART 1: THE SITES, we discover the places, practices, and people that were the focus of our research. Then, in PART 2: THE RESULTS, we explore the nine elements that made up NYC's Digital Public Space in the pandemic. Lastly, in PART 3: THE LEARNINGS, we explain what technologists, policymakers, urban designers and researchers can learn and take away from the Terra Incognita NYC project, and suggest a short list of lessons that can be learned for community advocacy.

There are important takeaways from the Terra Incognita NYC project for technologists, policymakers, and urban designers. The project demonstrates why they must focus on equitable infrastructure provision, as well as on technology adaptability and affordability. They should center the social use of technology and accessibility, enhance community-specific notions of safety, compensate communities for maintenance labor and center their well-being. Perhaps most importantly, technologists, policymakers, and urban designers must foster the development of technologies that are in the public interest, and invest into the community-led revitalization of physical public space in NYC's neighborhoods.

There are also takeaways for researchers, especially those who wish to study digital public space through short-term ethnography. Such researchers should focus on creating a disciplined research effort to familiarize themselves with local cultures, develop interdisciplinary skills, and implement organizational strategies for capturing the emergent nature of digital space.

Most importantly, Terra Incognita NYC crystalized a list of learnings for community advocacy. The project shows that community building and solidarity are important for building digital public spaces, and that those elements need to be strengthened. It likewise shows that technologies need to be more open to community innovation and to facilitating local connections, that there is a need for building up peer-to-peer support networks to develop tech literacy, and that there is potential in building partnerships with both platforms and researchers. **Finally, Terra Incognita NYC shows that local community leaders should lobby policymakers, with the goal of building long term partnerships to build and maintain equitable technology infrastructure and access.**

Table of Contents

Introduction

Terra Incognita NYC:
The Unknown City

If a city vanishes, where does it go? For much of 2020, the largest city in the United States ceased its normal existence, and was pushed—unwillingly—into a vast experiment: socially distant and technologically mediated life. In the process, it was forced toward an unknown new city, forced to inhabit an untested new reality.

Terra Incognita NYC captures moments of New York City in the COVID-19 pandemic. These captures are not of policymakers or scientists, but, instead, of ordinary New Yorkers in all five boroughs, as well as the communities and spaces they inhabited in summer 2020. It is the story of how these communities used technology—some eagerly and others stubbornly; some to adapt and evolve, others to preserve continuity and normalcy—to stay together. Most importantly, it is the story of New Yorkers as told by themselves, and as observed by digital ethnographers.

While the physical city receded, for some, the digital city appeared. *Terra Incognita NYC* is overwhelmingly a catalog of how this *new, digital public space* was built and discovered, expanded and maintained, embraced and contested. This digital public space offered New Yorkers (and, indeed, people around the globe) the chance to replicate some aspect of the pre-pandemic city.

The *Terra Incognita NYC* project asks: How do people "do" public space online, in a pandemic? And under what conditions? Does "the digital" make a difference? Who dictates the conditions for digital spaces, and to what ends? What kinds of digital spaces feel "public" to their occupants? What are the material and political conditions, and the thresholds of participation? Who is in, who is out, and who is somewhere in between? What role does "the virus" play? In what ways does the particularity of the City of New York frame these experiences?

The digital city also accurately mirrored the existing divisions, inequalities, dangers, and missed opportunities of the physical city. In 2017, for example, 20% of white and 22 percent of Asian New Yorkers were without broadband internet access, compared to 30% of percent of Hispanic and Black New Yorkers. Meanwhile, 46% of New York City households living in poverty did not have broadband at home, while wealthier boroughs had more accessible conduit and utility poles[2]. And even these hard numbers on the digital divide don't address some of the other failings we see in urban space: overreliance on private infrastructure, racialized policing of public space, or poor maintenance.

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2   This, however, is increasingly recognized as a policy area that is in urgent need for an intervention. In July 2020, the Mayor's Office of New York City announced that the city will invest $157 million into improving the internet connection of 600,000 New Yorkers, prioritizing 200,000 residents of New York City Housing Authority (NYCHA) for high-speed internet rollout (NYC Mayor's Office of the Chief Technology Officer, New York: January 2020.
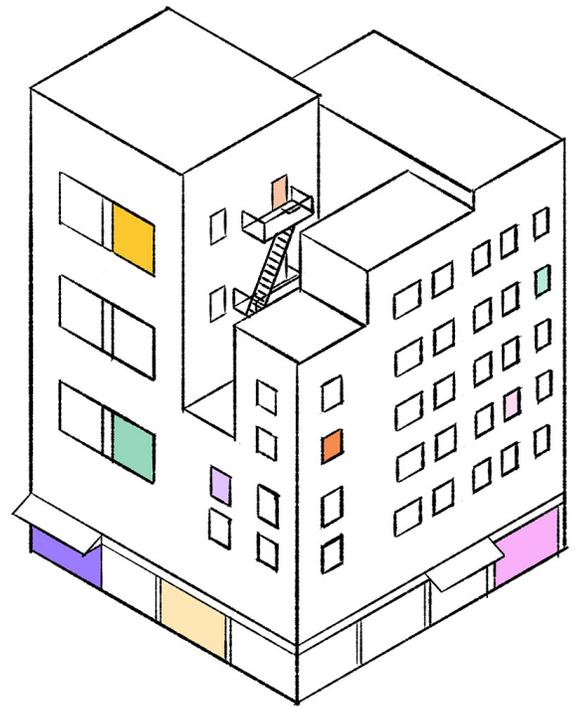
In NYC, the geography of the digital divide maps onto the pandemic-specific geography of risk and inequality. More affluent NYC communities were able to shelter in place, while New York City's poorer communities—themselves within majority communities of color—were not in lockdown. Instead, they continued to be "outside" as frontline workers[3], and thus were disproportionately put at risk for contracting the SARS-Cov 2 virus. As the city went into lockdown, these existing issues of discrimination and underrepresentation were exacerbated further, and affected fundamental elements of social life, ranging from schooling to work. They also found a new digital form, for example through racist disruptions of Zoom convenings ("Zoom bombing").

At the same time, however, we saw radically scaled experiments in virtual community- and public-space building across the city, across communities, across practices. In New York City in the spring of 2020, these experiments happened against the backdrop of the most concentrated loss caused by COVID-19. Three weeks after the first COVID-19 case was reported in New York State in March 2020, the "NYS on Pause Program" began, requiring all non-essential workers to stay at home. Just ten days after that, New York City reported 1,000 deaths, and almost 23,000 deaths four months later, at the end of July 2020[4].

As these deaths occured, New Yorkers were stripped of the public spaces that make up so much of the city's identity and its fabric, and which provide ways to gather as a community. They also faced collective trauma of the pandemic and the loss of so

many lives and livelihoods. But community building efforts—many of them digital, but neighborhood-focused, and often driven by a strong sense of solidarity (for example mutual aid groups)—thrived. These efforts were further fuelled by the resurgence of the Black Lives Matter (BLM) movement in the light of the killing of George Floyd, and the city-wide curfew that was imposed in reaction to the ongoing BLM protests.

The most important revelation of *Terra Incognita NYC* is, perhaps, the most obvious. During the pandemic, many New Yorkers were forced to replace their social infrastructure with technology infrastructure. And such a replacement was not without cost. Caring for children, seeing friends, maintaining physical and mental health, ensuring neighbors are safe, participating in communities of worship or interest or identity: all such social exchange, and more, was replaced for many New Yorkers with new technological facsimiles, each with new technological demands and dangers. Those who lacked access—in different ways—to

3   "New York City's Frontline Workers," New York City Comptroller Scott M. Stringer, March 26, 2020

4   "COVID-19 Data," NYC Health

such newly necessary infrastructure were newly excluded from NYC's digital spaces; neighborhoods lacking reliable or powerful internet fell behind those that did; and those who did make it online had to navigate new cultures, etiquettes, and improprieties of new digital public spaces.

Thus, *Terra Incognita NYC* doesn't only reveal how the city's social infrastructure was replaced by technological infrastructure. The project also reveals how technological vulnerabilities now create social vulnerabilities.

Ultimately, *Terra Incognita NYC* found that while digital public space opened new doors for connection and experimentation and evolution, the overwhelming focus remained on continuity. Neighborhoods mattered more, not less; those with existing affluence and access continued to enjoy both. Communities that existed beforehand found ways to stay together; those who were systemically affected by discrimination and the lack of social capital or technological infrastructure were largely still denied both.

In this unexpected, unwilling experiment, it seems, the digital did not offer an escape from the physical. Instead, the digital city reinforced—for good and for ill—the physical city. The *Terra Incognita NYC* research has shown that this digital city is comprised of nine elements: curation, membership, publicness, safety, locality, affordances, infrastructure, intimacy, and temporality.

CURATION

NYC's digital public space often manifested through targeted programming and curation of online events, accompanied by a

narrative and desire to maintain established routines and achieve a sense of normalcy. Moderation space was key in this respect, as was directing and controlling the flow of activity and interaction.

Manhattan open mic host: So now [attendees] are willing to learn about Zoom and different things, as opposed to before. Then, they'd say, "Well, I went down to [the open mic venue], I went to the theater this week: so, I'm good. I don't need to try to figure out a new app to connect with people." But now they are trying. I had been wanting to do this for a while, these online events. And it was hard. It was like pulling teeth. And now a lot of people have more time on their hands.

MEMBERSHIP

Communities had implicit and explicit rules about membership that were layered on the digital space they inhabited, affecting how if and how people could access this space. Membership emerged from, and was entangled with, individual and group identity: both of which were plural, and sometimes contested. Membership also served as a platform for constituting a sense of belonging to a particular community or place in New York City.

Queens Reform temple rabbi: We went immediately to doing Zoom meetings, where everybody can see each other. That's because my major goal in doing the service was: we have to keep the temple's community up. And if you're watching the service where all you see is the rabbi and the cantor, and you don't see anybody else—aside from being a really boring movie—you lose your community. And so we had to keep the community part on it.

PUBLICNESS

Publicness and public spaces during COVID became contested in new ways, around what it meant to be public or be in public. Platforms often confounded boundaries of "public" versus "private," and digital publicness raised new questions of politics. At the same time, the pandemic lockdown also remade the physical public spaces of neighborhoods, as more people spent time at and near their home.

Brooklyn runner: I still do consider it [Strava[5]] a public space; I wouldn't post anything too personal there. I wouldn't post anything that I would regret my boss reading. I don't really post bad news there. If I had an issue that I was upset about, I would talk about it with someone. But I wouldn't write it somewhere permanent. I do think of those platforms as being relatively permanent; yes, you can go back and scrub, but that's also work. I just make it a goal to never write anything that I would be embarrassed about or regret having the public know. So, it does tend to paint a much more optimistic rosy picture of my life.

SAFETY

"Feeling safe" was a necessary condition for digital public spaces to emerge. It was connected to feeling welcome and to belonging, but its nature was continually changing. Safety was also related to physical safety, especially in the context of being at risk of contracting the virus, and affected decisions made by moderators and facilitators about programming.

5   Strava is a platform that allows individuals to track their exercise. It uses GPS data and has social media components.

Staten Island group admin: The point that the moderator was making was: we don't want to be censoring and we don't want to suppress freedom of speech. And that,as a reminder, this group doesn't exist for that. That we don't have to provide a safe haven for every voice.

We are intending to provide a safe haven for positivity. And if we allow a lot of negativity to continue, we're actually pushing out folks who feel attacked, who feel like they're in a safe place. That point was accepted. We don't have to feel like we're suppressing people's freedom. This is a private group. They can say all of that shit everywhere else on social media. If you're going to allow members to get abused by people who don't mean well, then you're just every other Facebook group, right?

LOCALITY

Daily connections became denser and localized, while simultaneously expanding geographically: hyper local, yet more global. Events and social spaces online allowed people not in New York to participate remotely, causing digital public spaces to become comprised of multiple geographic connections.

Bronx business owner: I've always had a community angle: we always wanted to help small businesses in the Bronx, brand them, give them a unique visual language. But now you want to just submerge yourself. Because we need to do something for the BX. We needed to do something for our people. At the end of the day, it's the people that make the space, make the borough. We're talking about people of color, we're talking about immigrants, we're talking about survivors, we're talking about people

that have created everything out of nothing, disenfranchised communities. That's the basis for [the store], that's who we showcase. And so we truly represent the Bronx accordingly: through our media, apparel, and everything that we do.

AFFORDANCES

The technologies that New Yorkers used to continue their social practices and to build up digital public space afforded new possibilities. But they also afforded new barriers to participating and belonging, a dynamic that played out differently across different communities. At the same time, particular affordances shaped the expression of individual and collective identity and participation. Knowledge and control of platform affordances played a central role in how publicness was constructed, perceived and maintained.

Brooklyn runner: I mostly post about running on Strava, because that is where the majority of my friends who were runners are also looking. And it's a platform that is just better suited for talking about running and interacting with other runners there. I worry that if I post too much about running on other platforms like Facebook and Instagram, that my non runner friends will get bored, and they don't want to do that. But if I run a marathon, or I have a particularly good or particularly bad race where there's like a really compelling story, then I'll post about it on Facebook and Instagram or Twitter.

INFRASTRUCTURE

During the lockdown in NYC, unevenly distributed and maintained infrastructure came to the fore. The "digital divide"—regarding access to the internet, as well as quality of

access devices, ability to use them at the time needed, and access to the relevant services and platforms—was heightened and expanded. The vulnerabilities of the technical infrastructure became social vulnerabilities.

Queens Reform temple rabbi: We've been having some people go to people's homes, in as safe a manner as we can, to install a webcam. We recognize there are people who don't necessarily want to come to Shabbat services, but they might want to come to high holiday services. So that's why we added very explicit language to say: we will try to help you. I bought a bunch of webcams. We have a fair number of senior members, people in their late eighties and into their nineties, who are regulars at our services. Slowly we've been able to get some of them online with a Zoom camera, which is always wonderful. They are there with their faces, and they can see us. We can see them. And we know what a huge advantage that is.

INTIMACY

During NYC's lockdown, digital platforms and services provided social and economic lifelines. Technologies brought many public events and activities into people's homes, reconfiguring experiences of public versus private. Platforms and interfaces could forge intimacy, in some instances, though often dependent on the context at hand.

Manhattan yoga student: There's definitely an energy: a community vibe from [physically] practicing among other people, getting adjusted by the teacher, etc. And just feeling relaxed and calm after a long day;just being able to unwind and let everything go. But

when I'm doing it on Zoom, I still feel a little bit tense or a little bit stressed, because of the whole digital aspect of it.

TEMPORALITY

In the pandemic, experiences of space and place were inseparable from shifting experiences of time. The pandemic itself was often narrated in temporally specific ways, such as points on a timeline. Digital technologies and platforms often extended these narratives and experiences, or were themselves imagined in temporal terms; and digital interactions were also framed according to the binary of synchronous/asynchronous.

Bronx business owner: So it was March 28th: the day that New York locked down. I remember. I closed the shop with the gate and everything. And I looked at the shop. I took a photo and I said: you know what? I think this is it. I think I'm going to have to close both shops. Everything is done. We don't have money coming in. The online is not set. Now we have to close our physical shop. We were already struggling. So I was just distraught. I just thought: what am I going to do? But I've always been a positive individual, optimistic. So I thought: yo, I'm gonna get through this. We're gonna get through this.
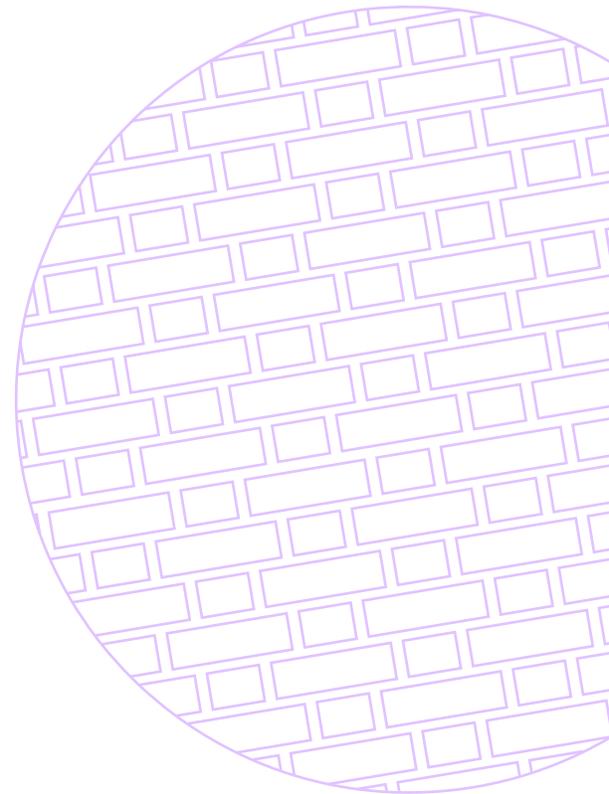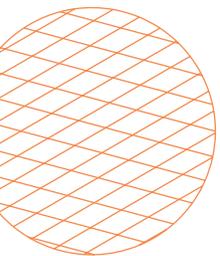
METHODOLOGY

The *Terra Incognita NYC* project was a rapid research project that lasted 20 weeks in total. Field work began in mid-June 2020 and ended in mid-August 2020, with the subsequent weeks focused on data analysis and write up.

The project followed a qualitative research approach, which was broadly focused on digital ethnography. This methodology was chosen due to the restrictions imposed by the New York State-wide lockdown and the fact that NYU had suspended all in-person research. It was also chosen because it allowed for an in-depth analysis of how publicness was constituted across a myriad of social practices, communities, digital spaces, and geographies across the City of New York.

"Digital Ethnography describes the process and methodology of doing ethnographic research in a digital space. The digital field site is sometimes comprised of text, video or images, and may contain social relations and behavior patterns strewn across many nations, cities or intellectual geographies. The field site may be composed around a singular belief, such as a brand following, or can be a network of dozens or even thousands of different belief patterns, social customs and actions. (...) The difference is that the anthropologist may be able to access the field site without physical travel. In many cases, the fieldsite may be a mental construct created by a group of geographically distributed nodes on an information network."[6]

Conceptual Approach

To facilitate the capturing of and analytical engaging with the emergent character of the digital public spaces of NYC—and the examining of how they may stabilize as affordances of (previously physical) space—the **conceptual approach** of this study is grounded in social practice theory[7]. Social practice theory is a framework that focuses on the transformational character of *how people do things*, in order to understand the patterns of stability and change in our social life.

Social practices consist of three elements: *meanings, competences,* and *materials*.

Meanings designate the social and symbolic significance of participation in any given moment, including emotional knowledge; *competences* are skills, multiple forms of shared understanding, and practical knowledgeability; *materials* are objects, infrastructures, tools, hardware, and so on, as well as the body itself. These elements are individually distributed and combined, but inform each other.

The stabilization of social practices is not static. Elements change as linkages between them are continually made and remade, as practices stabilize (or disinte-

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6   Cyborg Anthropology Wiki, "Digital Ethnography"

7   Elizabeth Shove, Mika Pantzar, Matt Watson (2012): "The Dynamics of Social Practice: Everyday Life and how it Changes," Sage.

grate) across time and space. The making, breaking and re-making of links between the elements is "transformative," in that it (re-)shapes those elements that do not disintegrate. This means that the concept of social practice provided a useful basis for observing, describing and analyzing the emergence of new (digital) public spaces during the pandemic, as well as how they changed, or did not change, under the changing conditions imposed by the pandemic.

Anchors

In order to navigate this report and its rich landscape of empirical data, it is important to outline three main anchors that ground this work: *publicness*, *community*, and *digital space*. These three notions are central to the project, and have guided both data collection and analysis.

Publicness is a practice

The *Terra Incognita NYC* project shifts the emphasis from public space—often framed exclusively as an achievement of design, and grounded in the condition of public ownership—to *publicness as a sociopolitical practice*. The infrastructures, and digital spaces, that people created and occupied were not in public ownership, but owned and provided by corporations. But despite that, such private spaces were treated by research participants as public, albeit in varying and sometimes conflicting ways.

For the purposes of this study, what "is" public is grounded in how people were considering, expressing, and practicing a sense of publicness in digital space; it is also grounded in whether they considered their space to be public, or not. This notion of publicness emerges from how being together (congregational life) is performed online. It is manifold and observable in the ways in which power and control manifest; how boundaries are drawn, enforced, and softened; and how this happens in a different way online than it would in a physical public space.

Questions around "who decides" are different here. Technology designers, community leaders and facilitators, individual community members and members of the public: all play slightly different roles, and—sometimes, not always—these roles are entwined more than they would in physical public space.

The focus on how a sense of publicness is created and performed also tightly relates to the ways in which control is more concentrated in digital public spaces. This concentration is due to technological affordances: such as access, but also, importantly, including deciding who gets to speak and get heard, and in what way.

Community, membership, and belonging are layered onto public space

In this project, the notion of community is broad. First and foremost, it refers to the ways in which people expressed and performed a sense of belonging: to a cause, to a locality, to a religion, to community of practice, and so on. It also refers to how this sense of belonging was enacted and policed through notions of membership, and how this unfolded differently in digital space than it would perhaps in physical public space, where visibility and access are different.

Community (and membership) connotes privateness, in a way that may sometimes conflict with publicness as a practice. But the complications between these terms provides a window into the ways in which communities have rules, which manifest via membership and differ between different groups.

These rules are layered onto public space, whether it is physical or digital public space. But as community and public life shifted online, these rules were made explicit. This, in turn, underscored the significance of membership, and its multiple layers, for understanding the composition of publicness.

Digital space is multi-layered

The concept of digital space is key to this project. There are multiple layers to the space framing: the technology, the community, the locality. The technology, and its affordances, was both infrastructure and a "real" space in which people convened.

Most importantly, it was treated as a space by community members: for example, Zoom became a synagogue, a community center, a game room, and so on. The community and its social practice "filled" this space, in distinct ways with their varying socio-technical practice.

These practices took on a different form than in physical space, but still stayed "the same" (praying, singing, playing, discussing). Indeed, much effort was put into enacting "physical" practices to recreate the "original" space the community convened in.

Central to framing digital space in the Terra Incognita NYC project is the question of how "the digital" made a difference in social practice. This varied from practice to practice and community to community. Important to note is that the sociality of the group equally shaped the nature of the online experience, and the digital space. **Geographic connections—local, translocal, global—played a central role in the constitutions of digital public space.** Many communities remained tied to local places and spaces, but at the same time geographic boundaries of representation were redrawn by people "coming into" the digital spaces from many different places.

Empirical Research and Analysis

The field sites for the *Terra Incognita NYC* research project consisted of the five boroughs of New York City: Manhattan, Brooklyn, Queens, The Bronx, and Staten Island. For each borough, a researcher was deployed.

In the first phase of the project, researchers zoomed into the field. Each spent three weeks scouting out field sites and negotiating access to the communities and online spaces. To do so, the lens employed in this initial phase was "community of practice" (e.g. a mutual aid group), and snowball sampling[8] was used to recruit participants. After this first phase, three field sites per borough were selected by using the following four parameters: (1) social practice (e.g. volunteering), (2) NYC neighborhood (e.g. Astoria, Queens), (3) digital platform (e.g. Facebook), and (4) constituents (e.g. parents).

In the second phase of the research project, researchers spent six weeks in the field to conduct qualitative research in their three field sites per borough. The data was collected through online participant observation, screen-saves and -captures, and semi-structured and open-ended interviews (via phone/video conference)[9]. For each week, the research team collectively decided to focus on a particular theme—such as "fric-

tion," "activism," "inequality," etc.—often based on current events in the city, or new patterns that were emerging across field sites. They also wrote up weekly field memos.

In addition to the field research, the research team met in weekly workshops to debrief on the ongoing fieldwork. As the data came in, it was pre-coded to identify core themes that cut across all sites. These themes formed the basis of the themes presented in this report. When the empirical research concluded after eight weeks in total, the data was then further analyzed to distill the sub-themes under the main themes in this report.

There are a number of **limitations** of this study: First and foremost, there is the limitation of time. This study was designed as a *short-term research intervention into a severely altered social situation* (lockdown due to the COVID-19 pandemic). Therefore, this study must be seen as a snapshot of an ongoing socio-technical phenomenon in the context of a particular political, economic and social landscape.

Second, there is the limitation of geography. This study is focused on the City of New York. Its findings are particular to this place, and may not be generalizable to other cities, in the United States or elsewhere. Relatedly, not all digital public spaces of NYC could be studied. Due to the time and resource restrictions of this project, only three sites per borough could be entered into the study as field sites. Therefore, the "map" of NYC's digital public spaces in the pandemic remains a partial one.

And third, there are limitations of this study in terms of its methodological set-up: ethnography acknowledges that the site of

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8   "Snowball sampling is a recruitment technique in which research participants are asked to assist researchers in identifying other potential subjects." (Oregon State University, Human Research Protection Program and Institutional Review Board)

9   The research team obtained approval from the Internal Review Board (IRB) at New York University and followed IRB and anthropological guidelines regarding research ethics, data collection and informed consent.

knowledge production is the researcher, or the research team. The data that was generated, and the way in which it was generated, was dependent on the individual relationships researchers formed, their research strategies, what they paid attention to in the field, and how they captured their data, as well as the technologies that the people who were studied used for their practices[10]. This is much a limitation as it is an enrichment, in the sense that these individual perspectives and data points, in conjunction with team discussion and analysis, brought out much of the diversity that makes up the City of New York.

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10   It is important to note that this study was weighted towards Zoom-based events/groups, which indicates how important Zoom—and videoconferencing technology per se—was for replacing in-person life more than other media, at least for some of the communities that were studied. It is also important to note that "Zoom ethnography," for the researchers, often felt the closest to "in-person ethnography."

Importantly, this study is limited by the inequalities that make up New York City. While affluent communities were able to actually go into lockdown, less affluent communities continued to serve as essential workers: in public transport, hospitals, grocery stores, warehouses, delivery services, care homes, and many other places. Their participation in NYC's digital public space was, of course, altered by this inequality, and therefore they are under-represented in this study. **Their relative absence is not a missing data point, but probably one of the most important findings: pre-pandemic inequalities prevail in lockdowns and are exacerbated by social isolation, and unequal distributions of risk exposure and welfare access.**[11]

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11   Mona Sloane (2020): Inequality in the Digital Pandemic, SSRC Items

PART 1

THE SITES: *What Places, Practices, and People were Observed?*

In this part, we discover the places, practices, and people that were the focus of our research.

For each NYC borough, we learn more about the social, cultural and political aspects of the different field sites that were observed, as well as the different kinds of technologies that communities used, and how they used them.

MANHATTAN

Places: *poetry open mic night, Pokémon Go gaming group, a yoga studio.*

Practices: *performing, gaming, exercising*

Platforms: *Instagram, Facebook, Zoom, Pokémon Go game, Discord*

PERFORMING
Open Mic Poetry Venue

This field site was a well-known poetry open mic night at a Manhattan Latinx performing arts venue, which moved its weekly events online during the lockdown. Every Monday evening, 40–60 people signed onto Zoom to participate, either as performers or as audience members. Performers typically signed up the day before and were confirmed Monday afternoon. Usually, there were circa 25 scheduled performers, plus a waiting list should the time allow for more performances (at most, 1–2 extra were usually able to perform). Both performers and audience members joined from NYC, the US, and around the globe, and were often linked by shared Latinx identity.

The sessions were energetic and very welcoming, focused on creating a positive, intimate space. They were very organized and run according to a tight schedule:performers were given 4 minutes each, as well as about 30 seconds of pre- and post-performance conversation with the host.

The technology used for these sessions was Zoom. About a third of the overall participants were on camera at any given point. Most of them snapped or applauded on camera in reaction to each performance. All participants except the host and performer (when performing) were muted until the performance concluded, after which the host unmuted all participants for circa 10 seconds, allowing them to clap, snap, and offer words of encouragement. Participants made substantial use of the Zoom chat feature to engage in side conversations, quote the poems, write out snaps/responses, offer encouragement, and share social media accounts. There were rituals around Zoom features: if the performer was a first-timer and revealed they had not been to the physical venue, they were then muted for the rest of the call. "Quotables" were popular in the Zoom chat, wherein people quoted lines or words from the performance that resonated with them.

GAMING
Pokémon Go

This fieldsite consisted of a group of people who got together to play Pokémon Go. Pokémon Go is a popular video game app

for smartphones, which was released in July 2016. Since then, the game has declined somewhat as part of the cultural zeitgeist, but is still wildly popular among its dedicated user base. The game uses GPS and augmented reality to allow players to walk around in *physical* space, while catching, trading, and battling with Pokémon creatures encountered *virtually* in real-world streets, parks, and monuments. Prior to the pandemic, Pokémon Go NYC groups arranged meet ups in large Manhattan parks to go on "raids," which are coordinated player-player battles against non-playable characters, as well as to trade and catch Pokémon with other players.

Once NYC went into lockdown, most of these players started playing entirely at home. The game has surged in revenue during the pandemic, with players making larger in-game purchases, so as to advance their progression and to take advantage of all features that have been adapted to at-home play. Such features include special items that lure Pokémon to the player (replacing the need to actually walk around in physical space) and increase the frequency of these Pokémon appearing on their screen.

Discord became the players' primary mode of communication in lieu of in-person meet-ups; and this study focused on three distinct Pokémon Go Discord channels. Similar in user interface and function to Slack, Discord allows users to chat in different "channels" (chat rooms) organized by the moderators. Discord has origins in gaming communities (often as a supplement to Twitch), but is now used by a range of different groups and social practices. Pokémon Go groups use Discord to coordinate virtual "raids," alert each other about Pokémon spotted in the wild, and occasionally chat about

other games, local news, and the pandemic. Users cannot play the game itself on the Discord; the platform allows for real-time chat as an affordance not offered within the Pokémon Go app.
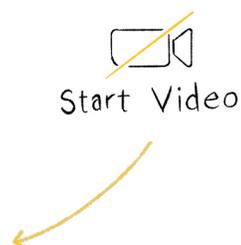
EXERCISING
Yoga Studio

As yoga studios, along with other exercise studios, were ordered to close their doors, many continued their program online. This site focused on a Lower Manhattan studio that hosted their weekly yoga class on Zoom. These classes were hosted by a single instructor and attended by 8-14 students, who had been coming to the in-person classes before. The class studied here was intended for all levels, including beginners. Each student called in from home; the cohort was mostly comprised of white women in their early 20s to early 60s.

The instructor hosted the class on Zoom, but made less substantial use of the platform's features. This more passive take on Zoom meant that most people turned their camera on, but then did not interact much with their computer for the duration of the class. The instructor mostly led the class away from her computer, but occasionally sat right in front of the camera to offer feedback to students, check for safety, or just made jokes to keep the atmosphere light.

Start Video

Like an in-person yoga class, the Zoom sessions always included an introductory and closing prayer and poem, as well as a silent meditation. There was not a lot of time for informal socialization, just a few minutes in the beginning and ending of the class.

BROOKLYN

Places: *running clubs, mutual aid groups on social media, a library*

Practices: *exercising, volunteering, educating / learning*

Platforms: *Instagram, Facebook, Zoom, Nextdoor, Strava*

EXERCISING
Running Clubs

Many New York runners join groups and clubs—which are typically neighborhood or borough-based—that organize group runs. This site included eight groups based in Brooklyn or with Brooklyn-specific chapters; some groups focused on competition and racing, while others primarily offered a support system and friendship network.

Most are organized around a neighborhood or area, such as South or North Brooklyn, or Prospect Park. But a few are specifically Black running clubs, offering a support network in an activity often seen as white. While some clubs's events are open only to members, others are open to a wider public. Most participants in the study were women in their 30s and 40s.

Most running clubs had Facebook Pages before the pandemic, ranging from 1,500–200,000 Likes (the latter for an NYC-wide group). Brooklyn-specific pages tended to have a few thousand followers. Some interaction and organizing happens on Facebook, but many participants posted about their runs on Instagram, or shared data over Strava, an exercise app.

Since the start of the pandemic, leaders of these clubs turned to the Internet and social media platforms. They did so to recreate a sense of togetherness, as well as to consolidate their community's existence online after co-present gatherings were canceled. During lockdown, some clubs organized non-running-related activities as well, like pastry swaps or a poetry reading night, along with making races and social events virtual. Running apps like Strava and social media platforms like Facebook and Instagram became the refuge for runners wishing to socialize with their peers, share their running accomplishments, derive inspiration and motivation for exercise, and follow news of the pandemic and other current events.

VOLUNTEERING
Mutual Aid Groups

Mutual aid groups have a long history in neighborhoods of Brooklyn and elsewhere, particularly among communities of color. New groups formed in the early days of the pandemic, as people became sick with COVID-19, lost their jobs or income sources, or were affected by reductions in public resources and services. Residents organized

neighborhood-based pods within larger mutual aid groups to pool resources, coordinate donations, and volunteer; healthy and more financially stable members assisted those who were food insecure, elderly, isolated, ill or immunocompromised, or newly precarious. Members of these groups were diverse, and included people from their 20s to their 60s.

Facebook Groups were the main channel for coordinating mutual aid efforts and creating a community around volunteering. Some neighborhood-based groups created private pages on Facebook where they tracked donations and coordinated volunteers, showing where volunteers were needed and how progress was being made to help those in need. Others also used the Nextdoor app to ask for help, recommendations, and relate local news, especially about COVID-19.

In these Facebook groups, neighbors with diverse backgrounds and interests came together—some driven by political activism, others motivated to help their neighbors—

often due to their own experience of illness or loss, and often with more time available because of the pandemic. These online spaces often made visible racial and other tensions in diverse, sometimes gentrifying neighborhoods of Brooklyn, particularly as renewed calls for racial justice and the Black Lives matter movement were sweeping through the streets.

EDUCATING / LEARNING
Public Library

The Brooklyn Public Library closed its doors to the public on March 16, a few days after a state of emergency was declared in NYC following the COVID-19 outbreak. The Brooklyn Public Library, one of the three public library systems in New York City (along with the New York Public Library and the Queens Public Library) comprises sixty neighborhood branches, including the main branch, Central Library, on Grand Army Plaza. Along with lending books, the library system offers access to computers,
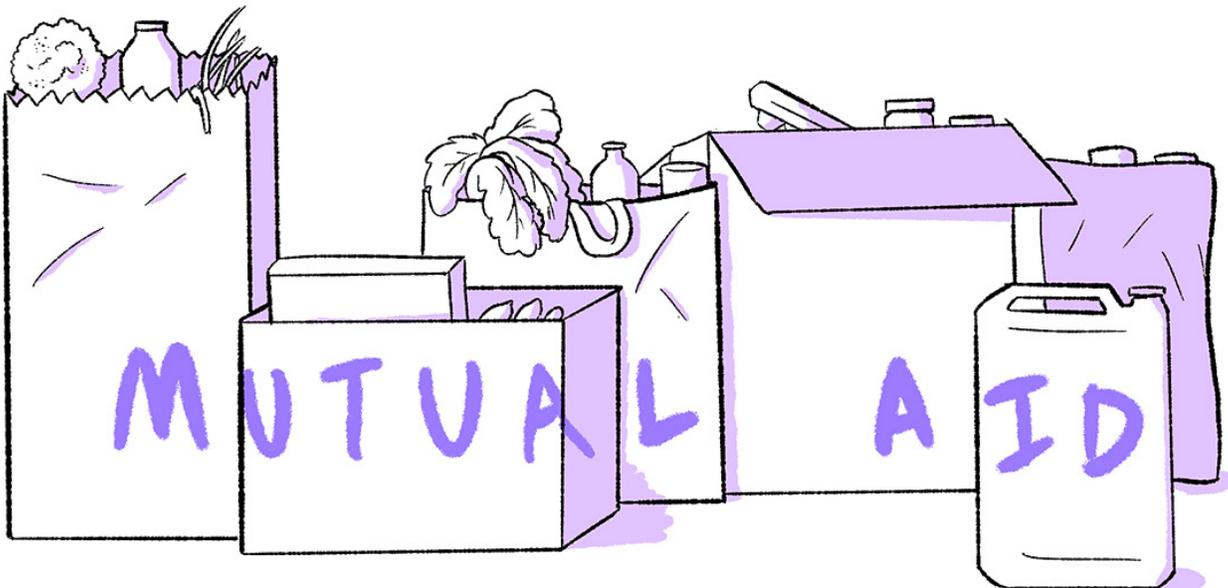
printing, free WiFi, youth and adult classes, exhibitions, performances, and many related educational programs and services. Many of these services are especially critical to low-income residents and families across the borough. Closing the library branches reduced already shrinking public spaces in the city and access to the many services they provide.

By mid-March, the Brooklyn Public Library began hosting virtual events, such as Virtual Story Time, followed by virtual writing workshops, language exchange events, technology classes, support groups, music performances, meditation, and creative classes like knitting and painting. Other events, like art exhibitions, the library simply postponed rather than attempt to create virtually. The library maintains a Facebook Page with 54,549 Likes and a Family Page with 6,823 Likes. The library also added a tab called "homeschooling help," for families doing remote school. Virtual programming focused on five age-based categories, similar to their in-person events (little kids, kids, teens and young adults, adults, and older adults). Librarians and library staff facilitated events such as story telling or book discussions largely over Zoom or Discord, or, to a lesser degree, Instagram Live, sometimes using interactive features to recreate experiences of community.
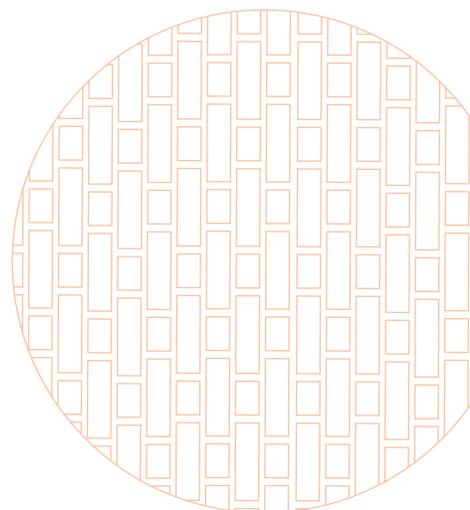
QUEENS

Places: *a synagogue, a cultural center, and an association of non-profit organizations serving the LGBT community*

Practices: *worshipping / educating, performing / learning / commoning, (self-)caring*

Platforms: *Zoom, Facebook, Google Classroom, email*

WORSHIPPING
Synagogue

As NYC went into lockdown, so did its religious institutions. This site was a Queens-based synagogue that started to host services, community events, and religious education online. Some of their programming changed to explicitly address the pandemic. For example, there was a shabbat service in honor of essential workers, which culminated in making noise during the 7 pm shift change; there was also an event on finding employment, for those congregants who lost their jobs in the pandemic. Congregants were mostly local and of all ages. Friday services saw about 90–100 participants, whereby some of the participants participated in groups, such as with partners or other family members.

Most of the digital practices of the synagogue were hosted on Zoom. This included normally scheduled Friday services, as well as events scheduled in addition to that. A lot of the communication about programming happened via the synagogue website, as well as via a Listserv. The religious educa-tion, including Hebrew school, was hosted on Google Classroom.

The services were led by the rabbi and the cantor. A main concern of the rabbi was to maintain a sense of community in the lockdown, and to keep the rituals as close to how they were done in the physical temple. During the online services, many of the physical aspects of worship were retained, such as standing, bowing, turning to face the door, covering one's eyes, and praying together. The virtual background he used during service was a photograph of the interior of the temple. While most community members were Jewish, the synagogue was explicit about "everybody being welcome."

PERFORMING
Cultural Center

This site was a physical building in a Queens neighborhood that houses arts and arts education programming. The focus was particularly on multicultural and multi-disciplinary arts practice offered to the local community. Much of the programming was focused on bringing the different ethnic

communities in the neighborhood into dialogue. Another focus of the programming was events for children. Some events were designed particularly around the disproportionate impact of pandemic on communities of color, as well as the Black Lives Matter movement. For example, the center had a call for artists to produce works in response to the compounding effects of the pandemic and racism that would be hung outside on the fence of the building. Events were designed for both the general public and artists themselves and they were organized either as synchronous events and distant programming or as pre-recorded information. Most participants at this field site were local to Queens, as well as Long Island City, and Far Rockaway, but some tuned in from other states, too.

For much of their communication, the center made use of their website. The synchronous and interactive events, such as gatherings for local artists, were hosted on Zoom. Much of the asynchronous programming, for example, recordings of dance performances, was available through the center's Facebook page but also sometimes as live-streams.

(SELF-)CARING
LGBT Network

This site was the Queens community center of an association of non-profit organizations, serving the LGBT community in Queens as well as Long Island. As NYC entered lockdown, the community center turned to having their employees run different weekly events, including exercise, guided meditation, crafting, arts education/museum tours, game night, and karaoke. What centered many of these events and convenings was the theme of (self-)care: the multiple ways to take care of ourselves during lockdown. This could be physical, but it was often accomplished through developing and maintaining social bonds with other LGBT people.

The technology used, for the most part, was Zoom. Many people who used the Zoom calls to connect with the rest of the community went to multiple events each week. They had a close-knit social circle. At the same time, the events were welcoming to everybody, and made to feel comfortable. Many of the events focused on playful interactions, such as a drag game night. Many of the original participants were local to the neighborhood and had spent time at the actual center. But during lockdown, participants joined in from other neighborhoods, states, and even countries.
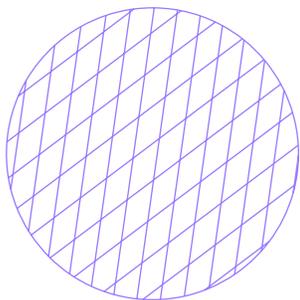
THE BRONX

Places: *Pentecostal churches; Senior arts center; Small businesses*

Practices: *worshipping; creating; trading*

Platforms: *Facebook, YouTube Live, Zoom, Instagram, Discord, Twitch, conference calls*

WORSHIPPING
Churches

Places of worship like churches remained important community sites during the pandemic. In the Bronx, two pentecostal churches illustrated different ways congregations approached maintaining community. One church is a Baptist congregation with a middle-class African-American membership, founded in the early 20th century. It owns multiple buildings, including the main church, as well as a home for the pastor in an upper income area of New Jersey. The church is part of the National Baptist Convention USA, a Black Baptist convention with strong ties to the South historically and currently, including multiple staff and clergy who moved to the Bronx from states like South Carolina and Alabama. The pastor—whose parents were both college-educated, but whose grandmother was enslaved—is active in Baptist life nationally and in NYC, including in multiple Baptist associations and missions.

The other house of worship is a charismatic storefront church, one of three branches in the U.S. and in Accra, Ghana. The leader, who styles himself a Prophet, migrated from Ghana; most congregants in the Bronx are Ghanaian as well. The church rents the space where it operates, and some of the pastors commute from places like Connecticut.

These different congregations and economic circumstances shaped each church's respective online communities and practices.The Baptist church maintains a Facebook page filled with positive sayings, photos of family, church members, and information about the pastor and his family. The pastor's grandson, who works in media production, helped him move services online, something he had not done before COVID-19. The Ghanaian pentecostal church streamed services live on their Facebook page, which doesn't include personal information and photos. Instead, there are photos advertising church events and promoting the pastor's beliefs and services. This church streamed services online previously, including recorded services on YouTube, and began using Zoom for meetings and some services during the pandemic. They also re-opened their physical church space as soon as allowed by the city.

CREATING
Senior Arts Center

This senior arts center is a collaboration between a Bronx-based filmmaking center and neighborhood senior centers to teach visual arts and literacy to adults between 60 and 90. The program included weekly classes to learn digital visual arts production, followed by a yearly exhibition of selected artwork documenting the daily lives of the participants. Before the pandemic, the exhibition was displayed each year in a different community public space, such as outside a housing complex or one of the participating centers. The seniors' artwork was produced in durable materials and mounted outdoors for people to view and interact with. Participants included men and women from three senior centers, some of whom had exhibited work previously.

The senior arts center co-present programming was suspended during the pandemic—which disproportionately affected the Bronx and put seniors in particular at high risk—and the senior centers closed. The exhibition for 2020 was converted to an online gallery that ran from June to July, although it remains available to view. The weekly classes first moved to phone conferences, as many seniors were unfamiliar with Zoom; but over time, participants learned to use Zoom over the phone conferences.

Most seniors had no Internet or computers at home, although they did have smartphones, and a number stopped taking the classes. The senior centers also partnered with the city's Department of Aging and other agencies to procure tablets for participants to use. Both phone conferences and Zoom classes allowed seniors to continue learning how to document their lives and worlds visually and to produce art for the exhibition. Some participants themselves fell ill with COVID-19 or suffered other pandemic-related challenges such as isolation, which they were able to document and address through their artwork. The virtual exhibit included selected artwork and a virtual panel discussion over Zoom which was broadcast via YouTube Live, as well as a celebratory (distanced) gathering for participants.

TRADING
Small Businesses

Many small Bronx businesses were hard-hit by the pandemic closures, but found creative, resilient ways to continue operating both as retail and as public spaces. The South Bronx is home to many stores and markets that are explicitly Bronx-based, featuring local artists and designers, particularly young Black and Latinx ones. Many

of these businesses had vibrant online presences across multiple platforms before the pandemic, and were also integrated into the fabric of daily life in their neighborhoods, such as the Bronx Terminal Market, the Bronx Night Market, or smaller shops in Mott Haven and Hunts Point. One Mott Haven shop, for example, sells its own fashion brand and merchandise, while Bronx Market features the work of Bronx-based creatives and entrepreneurs.

Although most shops closed their physical retail locations during the pandemic, especially during the initial lockdown, most continued using social media and promoted online events. Many already had considerable social media presence on Facebook and Instagram accounts, as well as their own websites.

During the pandemic, they built on these spaces to host events such as business pitch sessions, webinars, and even Twitch gaming sessions. One queer Bronx influencer, for example, worked to use digital tools like Twitch to draw attention to places in the Bronx. Another fashion brand posted regularly on Facebook, where they had previously posted about merchandise in the store, a local Dominican heritage celebration, or updates about photoshoots. In March, they announced the shop's closure, but continued posting about digital events, such as business workshops, podcasts, and digital campaigns. They also began a daily Instagram Live show. Other posts focused on the losses and difficulties caused by the coronavirus: one business owner became very ill with COVID-19 but survived; others in their community did not.

Some shops were also at risk of closing entirely and began campaigns to keep them in business. Over the summer, some shops began to open again, selling masks and continuing to promote online, in some cases benefitting from the federal COVID-19 small business relief program.
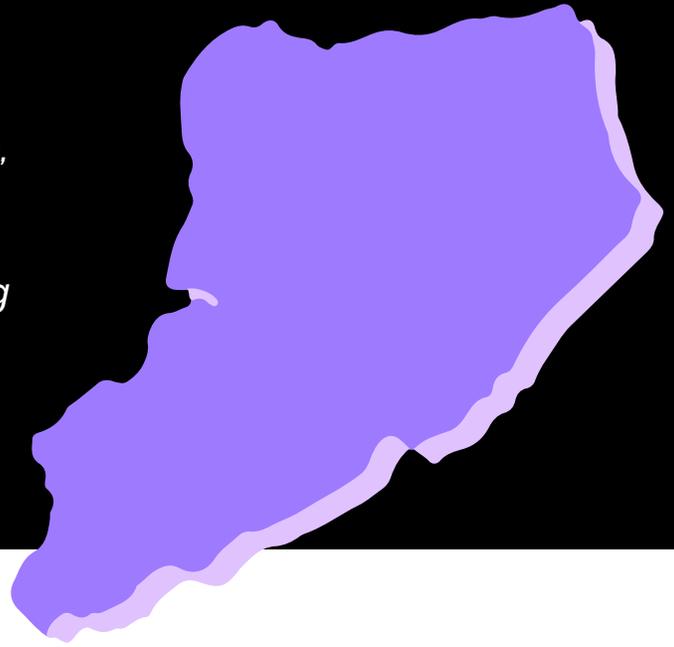
STATEN ISLAND

Places: *LGBT Council, walking group meetup, neighborhood social media groups*

Practices: *exercising, volunteering, educating and learning*

Platforms: *Zoom, Meetup, Facebook, Discord, Instagram, Twitter, Meetup*

SUPPORTING
LGBT Council

The LGBT Council in Staten Island is a non-profit community center, with one building in the borough. The Council was founded as an LGBT health center; it later became an independent non-profit community center, providing an array of services and programming for lesbian, gay, bisexual, and transgender people on Staten Island. In March, the center closed its physical location and announced it was opening a "Virtual Front Desk." All programs and services moved onto digital platforms "until further notice." During this study, the physical center building remained closed and all programming took place virtually.

The Staten Island LGBT Council's virtual programming took place across multiple, heterogeneous digital platforms and spaces, including Zoom, Google Hang, Discord, Facebook Live, Instagram Live, Twitter, and Meetup. Platforms such as Twitter, Instagram, and Meetup were mainly used for outreach, while virtual programming was hosted on services like Zoom, Google Hang, Discord, and Facebook Live.

The main participants in the study were staff members and program coordinators, including paid staff and volunteers. Most programs were aimed at particular subgroups and chose different platforms according to their audience. For example, Discord was the platform forqueer youth drop-in services, Google Hangout for LGBT elders' groups, and Facebook Live for pride parties, attended mainly by adult lesbians. Center organizers were especially concerned with protecting members' safety and privacy, and with addressing the increased risks of isolation that worsened existing health and economic disparities.

DISCUSSING
Facebook Groups

Staten Island, the smallest NYC borough by population, has multiple neighborhood Facebook Groups specific to the borough. This field site included a constellation of Staten Island resident groups on Facebook, with overlapping members who participate in multiple groups. Together, they comprised a broader media ecosystem with

different groups focusing on particular topics. The largest group, with over 30,000 members, received hundreds of daily posts and thousands of daily comments.

All of these groups are overseen by a small team of 1–3 administrators, typically the people who founded the group. Some of the groups have moderators in addition, volunteers who monitor posts and enforce group guidelines. The moderators also typically chat with others in private chat groups. For the moderators, maintaining these groups was a form of public service, the equivalent of keeping the local park clean. Although some members knew each other offline as well, many knew each other primarily through Facebook groups.

All of these Staten Island resident groups are on Facebook, mostly as private, closed-member groups and therefore not monitored by Facebook. The primary, and largest, group, is Staten Island Neighbors, with over 30,000 members, and has existed since 2008. The second largest has 10,000 members and was started before that, in 2007. Two smaller groups were started more recently and have approximately a thousand members each, while a fifth group dates to the beginning of the pandemic, and is specifically for COVID-19 resource sharing, like a mutual aid group.

Although other Staten Island residents use the neighborhood platform Nextdoor, there was little overlap between Nextdoor and these resident Facebook groups in our study, even though the app is similarly intended to support neighborhood-based discussion. Many people we observed or spoke with weren't aware of Nextdoor.

EXERCISING
Walking Group

The Staten Island Walking Group began as a Meetup group formed in 2019, by a woman who is a wellness life coach. As the organizer, Sandra coordinated nature walks around Staten Island, recruiting participants through the group's Meetup page. During the pandemic, beginning in June, walks were held virtually instead.

Although there was a core group of members who participated in co-present walks before the pandemic, a larger number are members on Meetup. But Sandra also has friends across the country through her professional networks who led virtual walks in places like Arizona, sharing scenic views filmed live and then shared over Zoom by Sandra. In another instance, she led a tour herself via Zoom through Prospect Park. Through the virtual tours, members could still see each other and interact, even if they didn't go walk outdoors together.

Before the pandemic, the Walking Group organized physical walking tours through their Meetup page. Since June, all outdoor events moved initially to Zoom, later to Facebook Live; in August, the group added the walks to a platform called Class Pass, which changed access to the group. The tours themselves were sometimes recorded via video on the tour guide's smartphone and then shared or streamed.

Moving online lowered the threshold for participation for some members, but changed the experience of the walks, often reducing the informal connections and side conversations that happened in-person. Attendance was typically quite low for the virtual walks we observed. The digital tours also increased the distinction between the guide and the participants, with the guide narrating the tour while members watched passively, often with little interaction between them.
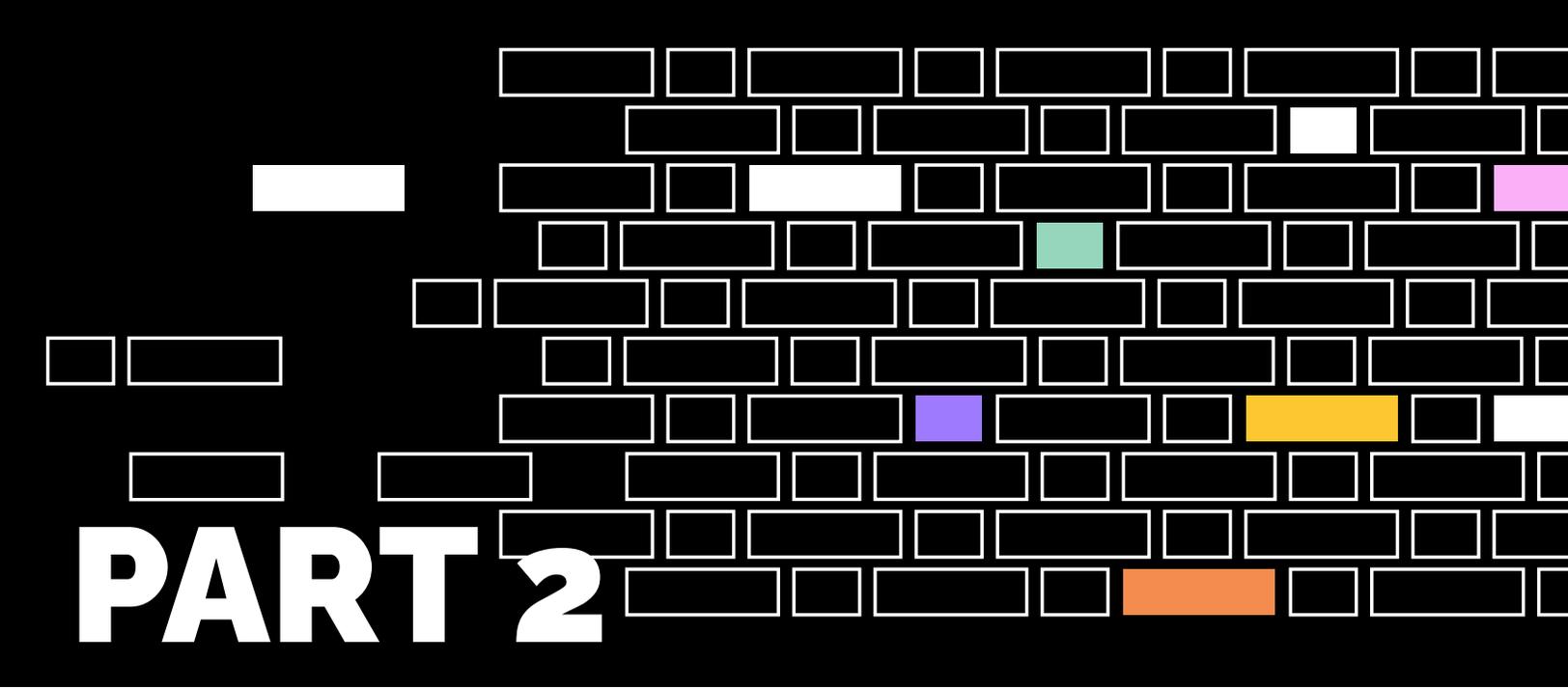
PART 2

THE RESULTS: *What Elements Composed NYC's Digital Public Space?*

We explore the nine elements that made up NYC's digital public space in the pandemic: curation, membership, publicness, safety, locality, affordances, infrastructure, intimacy, and temporality.

Each of these elements is introduced below by a guiding set of questions and an overview, and then explored through more detailed vignettes and quotes from research participants.

CURATION

Key questions

In what ways does programming and curation manifest NYC's digital public space? What are the narratives accompanying "moving online?" What role does moderation and facilitation play within the digital spaces? How do moderators and facilitators see their own work? What factors play a role in moderation approaches and routines?

The way NYC's digital public space manifested was through creating programs specifically targeted at certain audiences, and curating certain events. The "move online" was often accompanied by a narrative and desire to maintain established routines and achieve a sense of normalcy. Moderation and facilitation played a central role in the constitution of the digital public spaces.

Often, this work was made up of "translating" practices into their digital form, and directing and controlling the flow of activity and interaction in the digital space, as well as holding the space when disruptions occurred. Moderators and facilitators saw their work as a form of service to their community, and this sense of duty and care was heightened during lockdown. At the same time, their personal histories and politics, and their relationship to the city, their community, and the pandemic, played a role in how they moderated digital public spaces.

To make up for the temporary loss of physical public space, NYC's digital public spaces largely manifested in targeted programming and curation. The city's communities used a multitude of digital platforms and technologies to host the social practices that tied them together as individuals. This happened mainly through targeted programming, aiming at people with particular interests, or within particular demographics or social groups (such as "the elderly" or "parents"). Such curation was both a way to ensure consistency, and to engage in innovation by way of "translating" the programming into the digital spaces.

Sometimes, the social dimensions and foci emerged from the "original" spaces; other times these social elements were added

on or expanded during the lockdown. For example, the Bronx senior arts center focused on continuing curation of online events for the elderly, whereas the Brooklyn library developed new online programming to reach children and parents in the neighborhood.

Such "new" curatorial work often centered on advertising the new online programs, across different platforms. Yet despite—or, perhaps, because of—these efforts, the targeted nature of this programming, in fact, sometimes made it harder for people to experience different aspects of digital public space. This was particularly true for those who wished to join "from the sidelines" like they might have in a physical public space, simply because many platforms do

not really provide the digital equivalent of "sidelines."

Staten Island Walking Group organizer:
We couldn't walk as a group, but I wanted to keep walking. I want to stay in touch with my walking group. I don't want them to be indoors and be bored. So I said, when I'm walking, I just take my camera. I started doing it as a Facebook Live.

A defining narrative of "moving online" during lockdown was to maintain a routine and sense of normalcy. There was a focused effort to maintain schedules, define and organize the online activities in a way that would resemble the "real" activity as best as possible, and create digital spaces that looked and felt like the actual space.

For spaces that were characterized by programmed physical events, the focus on normalcy meant retaining the physical schedule, along with quickly finding ways to host these events online. For example,
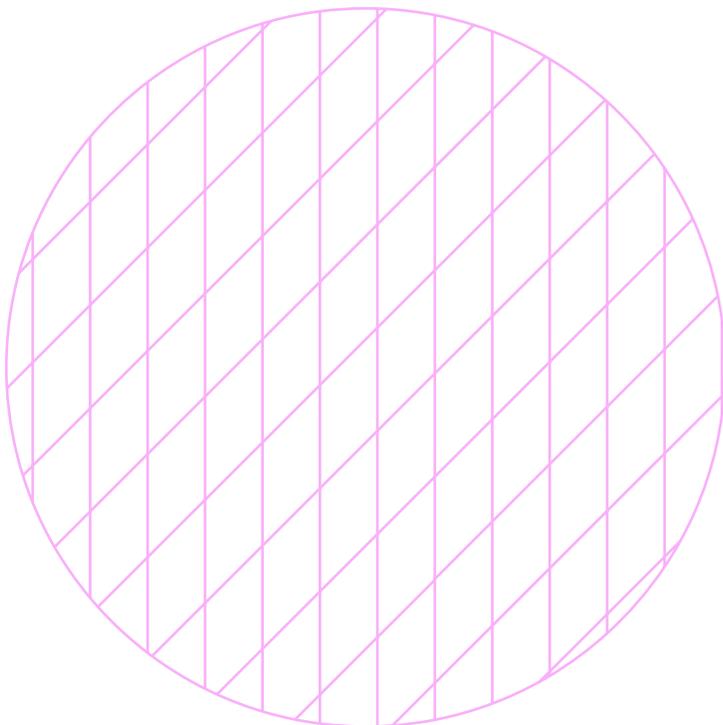
the Staten Island LGBT Council continued events online that were physically scheduled for Pride Month online. Meanwhile, both the Bronx churches and the Queens synagogue swiftly moved their "normal" services onto Zoom.

In addition to focusing on keeping such routines, a sense of normalcy thus necessitated re-creating the local atmosphere of the "real" space. For example, the rabbi of the Queens synagogue used a photograph of the synagogue as his Zoom background; this choice made him appear almost in the same position as if he was standing in the real space. Tying this together was a notion of "keeping going" with whatever was before, as best as possible, rather than innovating a totally new kind of practice and activity.

Manhattan poetry open mic performer, 20s: So I came [to the poetry venue] on Wednesdays; I did that for only two weeks and then—coronavirus. So, then I started writing more and more and more. One of my friends who lived in the city, she said, "Oh, did you know that [the venue] is actually going online?" So then I joined. I've just been performing there ever since.

Two key aspects in how NYC's digital public spaces constituted themselves were moderation and facilitation. More than physical public spaces, such as parks, digital public spaces depend on the continuous and multi-layered labor of individual facilitators or moderators.

Indeed, digital public spaces require facilitators and moderators in order not only to work, but even to emerge in the first place. Take, for example, people—that is, facilitators and moderators—offering a yoga class online. They needed to figure out how

to instruct a group of people via Zoom, and also decide how to ask students to position themselves in relation to their cameras. Other facilitators and moderators had to figure out how to curate the sequence of a religious service, including collective prayer and song; still others figured out how to organize a collective gaming experience that was previously very place-focused.

Another layer of this moderation/facilitation labor focused on defining rules of participation, as well as controlling the flow of the practice by enforcing them. Such rules include questions of muting and unmuting, camera's on or off, or how to use the chat.

The Latinx open mic host tended to enforce strict rules about when people were allowed to unmute themselves, as did the Reform temple rabbi. Controlling the flow also included "holding" the space when disruptions did occur, such as pets, children or other family members disrupting the participant, technical breakdowns, or when people would simply not show up.

Staten Island group moderator: So that's what got me into the whole moderating thing, because I got so frustrated. I thought: my God, this thing [neighborhood Facebook page] has so much potential! It really does. And a lot of people started asking questions: "When are we going to start moderating? When are we going to clean up the page?" So I just threw my hat in; I said, "look, I'm down." And it's been great. We've been adding more and more moderators. It's become a really good place now.

Moderators and facilitators see their work as a service to the community. Moderators and administrators tend to be a small group of dedicated individuals. Those in the group

often see their work within these digital spaces as a service to the communities they are part of, sometimes even as a calling.

This "service" aspect of moderation and facilitation is strongly linked to the collective experience of the pandemic. And such service extends into maintaining *and* strengthening social ties within the community and the digital space, even outside of programmed activities. For example, the leaders of the "social committee" at the Brooklyn running group continually came up with new virtual events—such as individually running to a favourite ice-cream parlor and posting a selfie on social media—so as to keep members both motivated and connected, while remaining socially isolated.

These groups of moderators and facilitators were not homogenous. Indeed, within such groups, individuals brought very different perspectives to their roles, which could result in disagreement. For example, Staten Island Facebook group moderators were very clear about the significance of their role in mediating conflict, particularly around political discussions. Yet moderators sometimes disagreed: for example, about whether or not a post was "political."

Staten Island group moderator: Some of the moderators, we also interpret things a little bit differently. So you try to come to a consensus if there's something we're not too sure about. And we'll go from there.

Moderation and facilitation are political practices, because they control space, behavior, and speech. This political dimension became heightened during lockdown. The way in which moderators and facilitators relate to their role in creating digital public space is often tied to their personal experi-

ence with the pandemic. For example, one leading member of the Brooklyn mutual aid group, who lives alone, had contracted and survived contracting the COVID-19 disease. Afterward, she decided to contribute to her community, as a way to connect to and help others, in a way that made her feel better.

Similarly, moderators' individual politics influence how digital public spaces are defined and group rules are enforced, in a dynamic that is ever changing. For example, the Staten Island Facebook group moderators sometimes intervene selectively. One Staten Island Facebook group explicitly states that it will not restrict Freedom of

Speech, lean right or left, and will welcome any opinion. But at the same time, that same group's main administrator announced publicly that he temporarily turned on the "post approval function," because the "liberals" in the group were getting out of hand.

Brooklyn runner: My restriction—it has to be running related—just completely went out the window. But I thought: any activity that helps keep people in touch, that gives people a reason to interact with someone else new, draws you out: I'm ok with it now,. And that's actually been really fun and liberating, because it never would have happened before the pandemic.

MEMBERSHIP

Key questions

How is membership enacted in the digital public spaces of New York City under lockdown? In what ways shape collective and individual identities the experience of publicness in a digital space? How do people develop a sense of belonging in a digital public space? What are the thresholds of participation and how are the practices defined that shape membership, identity and belonging?

How membership in a community was performed, negotiated, and policed mattered significantly to how digital space was constituted, and also how publicness was enacted. Communities had implicit and explicit rules about membership that were layered on the digital space they inhabited, affecting if and how people could access this space. Membership emerged from, and was entangled with, individual and group identity: both of which were plural, and sometimes contested.

Importantly, membership also served as a platform for constituting a sense of belonging to a particular community or place in New York City. In the social isolation caused by the pandemic, this was heightened and often articulated in terms of nostalgia for the actual physical space.

Rules around membership translated into social practices that helped "maintain a sense of community." For example, the Latinx poetry open mic night was a digital public space, which membership constituted through the expression of "vulnerability." Members showed vulnerability in their poems, but also in their chat conversations and comments. As such, the digital space was constituted around this chosen aspect. Meanwhile, the mutual aid group quite literally centered its membership on lending support, while the runners club focused on the solidarity that emerged from staying motivated together. The LGBT center in Queens centered on practicing "self-care" together, as a way to maintain a sense of community. For a reform temple in Queens, "maintaining community" among members was a key goal of the synagogue's leadership. The Queens rabbi was concerned about the temple's financial viability (specifically, that members continue paying dues) and also that congregants and members of the community (in the absence of in-person interactions in the synagogue) did not lose connections to others.

Queens Reform temple education coordinator: So we closed. Our first Sunday morning, we had [digital] *tefillah*, we had over a hundred logins. (I don't know if it was over a hundred, because it locked out at a hundred—that first day, we never expected to need more than a hundred logins). The one thing that we saw was the kids were able to interact with their friends, with their faces. It's been so nice just to be able to have that continuity of community, which we are very strongly built upon, in this type of forum was amazing. And it stayed that way.

Membership in many online spaces and communities was constituted by participation. Groups such as a Staten Island walking group, a Brooklyn mutual aid group, and Brooklyn Public Library events centered on shared participation and activities, often linked to place. As many of these spaces shifted online during COVID, the digital context often transformed the nature of such participation.

In the Walking Tour Meetup in Staten Island, moving tours online increased who could participate and where tours took place. But touring online decreased the social connections in-person tours fostered. For the Latinx poetry open mic night, meanwhile, performing together online fostered feelings of connection and intimacy.

In many spaces, shared language practices, references, and visual markers such as clothing or home décor shaped the contours of a community. Congregants at one Bronx church were primarily Ghanaian immigrants, with strong ties to a sibling church in Accra. Through shared language, references to Ghanaian norms and practices, and traditional Ghanaian prints, the pastor and other members linked their worship practices to transnational Ghanaian identity. A different Black Bronx church, in contrast, was rooted in a middle-class African American community, who fostered solidarity through conventions around singing and music and other norms. At the Manhattan yoga studio, carefully curated home spaces provided the background for Zoom sessions. Participants, mainly white women, visually indicated class status and consumption practices both through the style of décor visible and the amount of space available to them to practice yoga.

Manhattan open mic performer: People who watch [the open-mic night] on Facebook Live do get to see all of our performance. But we interact through the Zoom chat, which is why being on the actual Zoom meeting is so important, especially, even if you're just watching. That way you get to see how we interact as poets. In the chat, we want to talk about the piece that is being presented; we give a lot of feedback and a lot of love to the poet who just performed. We also make connections: a good portion of the friends I made through [the open mic] is because we talked during the chat or message each other privately, saying, "hey, do you want to collaborate on a piece?" or "I would really like you to go watch this open mic." And so the chat is a really big part for us, especially because we listen. And then we get to talk and connect in the best way possible.

Membership was constituted by intersectional identities. Rather than focused on a single identifier, both group and individual identities were intersectional: they cut across and combined a multitude of identifiers, such as race, gender, religion, age, sexuality, ethnicity, geography, and so on. Many of the sites and communities that were studied consisted of people who expressed their intersectional identities, including the religious sites. This intersectional plurality was something that could sometimes not be seen from the "outside," and only emerged after engaging with the sites deeper, and over a longer period of time.

These intersectional identities were made explicit by community members; in turn,-making them explicit became central to the constitution of the digital public space. For example, one pentecostal church in the

Bronx is explicitly constituted by members' identifying as both Christian and African (rather than African American); and this dual identification is embedded into the religious practice. Meanwhile, the poets of the Latinx open mic night explicitly referenced intersectional identity and experience in their poems.

Queens Town Hall community manager: I definitely do have Asian friends who feel a lot stronger about [anti-Asian racism] than I do, for better or worse. This isn't on purpose, I just wear sunglasses outside anyway. It's not a means to hide my identity or my race. But I'm a Filipino man. I'm fairly tan. So with sunglasses and a mask on, I'm quite ethnically ambiguous. And I'm happy because that's kind of my neighborhood, which is nice. It's quite a diverse…[my neighborhood]'s not even that diverse. I haven't seen that in [my neighborhood] yet, as much as I've heard about it in other neighborhoods.

These intersecting identities also had an outward-facing function: serving as markers for this particular digital public space, as well as signaling access. For example, the Black women's running club was explicitly marked as a space for *Black* women.

For the LGBT Council on Staten Island, intersectional identities provided the basis for programming according to gender, sexuality, and age. However, this organization—since it caters to subsets of queer participants—offers programs and services that deliberately silo members by identity, in order to form a protected space. While much needed for certain populations, it also needs to be said that generally, divisions intensified in moving online, because there sometimes was little opportunity for interacting across identities.

Queens LGBT drag game host:
Maybe the quarantine has allowed me more opportunity to meet a diverse group of people. Because there's a reason I don't perform in Hell's Kitchen. I don't want to interact with the cis white [gay men] that are yelling "YES, mom!" There's no interest there for me. I want to meet people that have history, and have experience to themselves.

Expressions of solidarity and companionship became increasingly important during the pandemic, both on platforms within "community" and "in public." Notions of solidarity and companionship structured communities—such as the mutual aid group and Black running groups—particularly through the language of sisterhood and brotherhood, or through the action of giving and sharing.

In the Brooklyn mutual aid group, solidarity was key to building community for many. Yet tensions over racial justice and gentrification often stratified how such connections were experienced. Similarly, among runners, understandings of solidarity and mutual connection were complicated by varying, often intersecting, identities: in terms of race, class, and gender. Such understandings played out in contested ways online.

Running groups were already organized in racially-inflected ways. For example, unmarked "general" running groups often attracted predominantly white participants; meanwhile, Black runners sought solidarity through identity-based groups, for an activity often assumed to be the domain of middle-class whites. Yet both Black

and nonblack runners became involved politically in the widespread protests movements against racial injustice following George Floyd's killing, along with resurgent Black Lives Matter protests in Brooklyn and elsewhere. Running became a new site of protest, as runners organized running-based protest events.

Brooklyn Runner: And now that it is the pandemic, I think it was just this unease and this guilt I felt as a person of color in this very racial environment. And the fact that many of my peers are being involved in the conversation as it relates to Black Lives Matter. It just felt really weird for me to not be a part of the conversation or, or it just felt really weird for me to just ignore it. Like I did, like years ago when Trayvon Martin died; and Eric Garner, too, in Staten Island. So post pandemic, given all the racially charged, murders, my use of Instagram again has become informative.

In the wake of renewed racial justice protests during the pandemic, interest- and place-based groups became more focused on politics. Online groups and communities organized around topics like running, for example, became new sites to articulate political identities, discuss political topics, and engage in collective action.

For Black running groups, the 2020 killing of Ahmaud Arbery, a Black man—while out running in a Georgia suburb—was particularly affecting, and kindled support for events like the Run for Justice. Unmarked running groups, which were not explicitly organized around racial identities, though often putatively white, evinced less of this shift. This made marked groups more politically activated than others. For white runners, running can remain non-political; but for Black runners, remaining apolitical is often not an option.

Brooklyn mutual aid groups took shape in response to the pandemic to provide support among neighbors, including grocery and economic assistance, as well as social connection. But discussions on these groups sometimes became contested, particularly when participants' social locations and experiences came into conflict. One person, for example, avoided what she saw as heated arguments about race and gentrification on a Brooklyn mutual aid group's Facebook page. Among two Bronx churches, politicization played out quite differently, however: while a historically African-American Baptist church focused on issues of racial justice intensively, a primarily Ghanaian charismatic church, made up of Black immigrants, did not.

Staten Island group admin: Depending on the day and the mood I'm in, I will often explain: "all lives can't matter until black lives matter," just pop in with that one.

PUBLICNESS

Key questions

How was publicness constituted? How were understandings of public versus private changing? How were experiences of online and offline public space changing? How did practices of allowing or limiting speech shape public spaces online? What was the meaning of "politics" in virtual or online publics?

Publicness and public spaces during COVID became contested in new ways, around what it meant to be public or be in public, and what counted as politics. Online spaces such as Facebook Groups or Zoom sessions often confounded boundaries of what people perceive as "public" versus "private." People often viewed their personal social media accounts as private, but participated in online communities they recognized as public or semi-public. Publicness often implicitly connoted interactions with strangers or beyond the sphere of home and personal connections. Platform affordances contributed to—but did not determine—expectations of privacy and publicness, such as how visible posts are to potential strangers, whether network connections are multi- or unidirectional, and who else is visible in a given online space. Degrees of publicness, in this sense, could be achieved by adapting digital tools in different ways, such as turning one's video camera on or off or sharing social media posts.

Publicness, then, necessarily raised the question of politics. This depended on social and geographic context: in some neighborhoods and interest-based groups online, "politics" meant any sensitive or controversial subject, including but not limited to electoral politics, which was often seen as divisive and something to avoid in public space. Censorship and free speech were often cited in these spaces. But in other contexts, politics, especially social justice movements, were seen as central to sociality.

The pandemic lockdown also remade the physical public spaces of neighborhoods, as more people spent time at and near their home. In parts of the Bronx and Brooklyn, among other places, public streets became new spaces for social gatherings, as restaurants and cafés were allowed to move onto sidewalks or into streets closed to traffic.

Publicness often meant being visible to particular constituencies. Publicness online was achieved, in many cases, through assembling practices and technology features, often expressed through ideas of visibility and image management.

In the Latinx open mic Zoom sessions, for example, publicness was enacted through multiple technical tools: this included leaving one's camera on, especially among those not performing, or participating in the chat, a lively space for interaction and banter. Non-performers who continually left their cameras on, showing their faces, became recognizable to other regular participants, and were sometimes called out by name by the host. Others left their cameras off but maintained a running commentary in the Zoom chat window: greeting each other, teasing, and responding, often quite affectedly, to the poetry performances.

For runners, social media, such as Facebook and Instagram, became an important space during the pandemic to share positive posts and foster motivation. Isolation from running groups left many runners disconnected from shared physical public space. Managing visibility on social media allowed posts to generate feelings of motivation

and accomplishment, which had previously taken place through group runs. Such generation occurred even when rosy online imagery was at odds with how runners were otherwise feeling, reflecting implicit norms about the purpose of social media that others might or might not share.

Bronx pastor: Everybody is welcome, we don't restrict people from coming. It's still public. However, when we are coming in now we're making sure that we are practicing all that they say we should do: checking temperature or whatever. So the church itself is an organization where it is open to everybody.

Public and private take on new meanings in digital contexts. Understandings of public and private were reworked—and contested—through social and digital media practices during the pandemic.

Online spaces were perceived as public or private to varying degrees, according to the people, platforms, and contexts involved. For a participant in a Brooklyn mutual aid group, interactions grew heated over the summer; she avoided discussions of race and gentrification that became pressing during the protests of George Floyd's killing

in May. For many Brooklyn runners, social media became more public during the pandemic to sustain motivation and share successes.

On Staten Island groups on Facebook, what counted as public or private shifted whether one was a resident or non-resident, as well as between resident groups. The borough's groups were open to any Staten Island residents, which built a shared sense of digital publicness among neighbors. But such place-based publics were difficult to access for non-residents. Further distinctions played out between groups, as one of the moderators explained, with the largest groups perceived as more "public" than smaller offshoot groups, which were created as alternatives. Dedicated platforms like Nextdoor restrict users even further to shared geography; here, users can only sign up from one location, and in many cases must provide evidence of residence to gain access to neighborhood-specific posts and information.

Publics online, then, were rarely fully public, in the sense of being accessible or visible to anyone. Instead, they inhabited an interstitial space that reworked concepts of public and private, in ways that were continually shifting, situated, and contested.

Queens Reform temple rabbi: What I don't consider to be public space online are spaces that are relatively private and you control who has access to it. So that might be things like the Zoom services we have, or my Facebook page, or the temple's Facebook group, or my Instagram feed. The reality is that even the more private spaces are more public than I like to believe, because there's a lot of people on them. And it really isn't that much of a challenge for someone to

share the information that's in that private space, if they wish.

The pandemic transformed experience of public space online and offline. Public spaces in many cases were foreclosed by the pandemic, but moving online transformed the nature of online and offline public space.

Previously in-person events—like the Latinx poetry open mic, the church services, the Reform temple services, the Town Hall events, a Queens LGBT center, the Staten Island LGBT Council, the library events, and a Staten Island walking tour meet-up—moved mainly to synchronous Zoom sessions. Other events—like the Brooklyn running clubs—took place on social media, primarily Facebook groups and Instagram.

Groups like the Staten Island resident groups pre-dated COVID-19;but became a new focus of daily life, first in the wake of the 2016 election, and then during the pandemic. Conversely, many neighborhood mutual aid groups formed specifically in response to the pandemic; they contended with organizing neighbors despite pandemic restrictions, and took place largely online.

For some, "public space" often implicitly meant physical space, such as parks or city streets. Runners like Sally, for example, wanted to balance socializing online with spending time in actual public space. Most runners continued running individually, but missed the collective support of running in groups, the main reason such groups formed in the first place.

For the Brooklyn mutual aid groups, although they formed online, it was difficult to gain access to them without making

direct in-person connections, such as volunteering at a neighborhood food pantry. Publicness was in this sense mediated by access online and offline.

The pandemic also generated new tensions around sharing a physical space. The two Bronx churches, though very different in many ways, were considered by their pastors to be public spaces, and endeavored to re-open, or at least hold services (even if conducted remotely) in the church building. The church whose congregation was largely Ghanaian re-opened as soon as allowed and began holding in-person services. The pastor exhorted congregants during broadcasted services to attend in person: saying that if people could take "buses and subways" to work, as well as be out shopping, then they could come to church. Even so, the pastor himself had moved outside the city for more space, and began driving to church. The mainline Baptist church, although closed to congregants, became a COVID testing site, which its minister arranged; he was also instrumental in securing mobile testing sites elsewhere in the area. Similarly, a Bronx-based brand and fashion boutique hosted a Juneteenth celebration with local political leaders. Even as these physical spaces closed, they transformed into new kinds of public space.

Brooklyn mutual aid volunteer: I do recognize that I have privilege in my, being in a white, middle-income body. And so I try to use that, since I don't have a lot of income or time to spare for things. At least I can show up and volunteer my body to take, to be in the space. So that's that's a public space I frequently occasion.
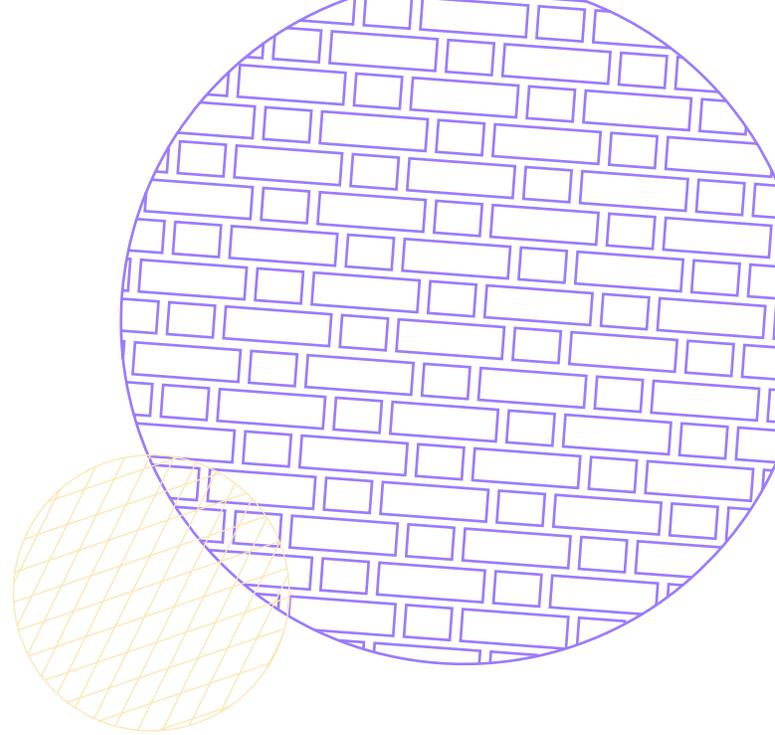
Censorship and free speech were key themes shaping public spaces online. Digital publics, especially on social media, were constituted and contested through rules, guidelines, and moderation.

In some spaces, such practices were often tacit. Such was the case at the Latinx poetry open mic, where language norms fostered closeness and intimacy, (re)creating the offline community space. Speech, such as explicitly sexual or flirtatious comments, for example, made visible gender dynamics: for example, when a man participant remarked on the appearance of women poets. Although the host, also a man, left these exchanges alone, during an event on a different night, run by a woman host, the host laid out ground rules at the beginning directly barring nudity or explicit performances.

In another instance, participants called out a transphobic comment in the Zoom chat, which had gone unremarked by the host. A few weeks later, a trans poet performs a piece about his pronouns and identity,

which receives enthusiastic comments in the chat, except for one person who questioned trans identity ("Okay, we used to call a transvestite a trannie…"). Instead of correcting them, another person references the transphobic joke from earlier. Participants worked through the chat to support the trans poet, but without openly censuring anti-trans comments.

In the Staten Island neighborhood groups, free speech versus censorship was a key theme through which ideas about publicness took shape. The line between moderating and censoring was frequently policed and debated, both by members and moderators.

Moderators were tasked in the largest of these groups with preventing "political" posts, and also adjudicating arguments over what counts as political posts and acceptable speech. Claims of "censorship" were themselves political; although both leftwing and rightwing members disavow such regulation, they are framed in ideological ways (the largest, ostensibly apolitical group exhorts members to "Be Kind and Courteous," while a left-leaning group bans "hate speech and racism"). For moderators and administrators, however, enforcing the rules was necessary to maintain a functioning public space online. As one moderator put it, "I don't consider censorship to be a very ugly word… I think what some people in [the group] would call censorship, I would call administrating."

Staten Island group moderator: It's gotten to that level many times, especially, before we had our own little politics subcategory, anytime we discussed politics. That was the absolute worst. So we try to keep that under control.

Publicness was defined as a space where politics are negotiated. Public spaces online during COVID were politicized in different ways depending on context. In the Brooklyn running clubs, racial inequalities came to the fore during the George Floyd protests, highlighting the whiteness of unmarked public spaces and the communities that tend to control them.

In the mutual aid groups, questions of politics divided members, particularly those who saw the work itself as inherently political. Hala, a writer and organizer with one Brooklyn mutual aid group, was critical of members who don't recognize the political nature of the work: citing, in particular, racial tensions between long standing Black residents and newer, often better-resourced white ones.

For many BIPOC residents, organizing for mutual aid is an inherently political response to an oppressive social order, in which survival is necessarily political. Erasing or downplaying such political implications, in contrast, was a strategy associated with white middle-class residents, who sometimes shied away on Facebook from contentious subjects. In other instances in the mutual aid groups, there were debates over the role of local political candidates building political campaigns through such local, group organizing.

In the Staten Island groups, such debates— over what counted as politics and where "politics" were appropriate—were even more explicit . In the largest group, "political posts" were explicitly banned, and posts deemed political by the administrators were shunted to a politics offshoot group. (Two of the neighborhood groups formed during the pandemic in response to the first group's policy; as such, these groups explicitly

allowed "political" posts, one leaning right and the other left.)

Much of the time, the term "political" meant "not partisan" or "not about electoral politics." But it also encompassed views and decisions about contentious and oppositional views of people A Staten Island group member who posted many pro-Trump memes later enthused over a food-based post, saying, "Holy [redacted] a non political post!!! 😊😊😊😊." One Staten Island group moderator considered pro-police and "blue lives matter" posts political and would prefer to ban them; but they relented after Black

Lives Matter posts were permitted, saying, "it's very hard to have that conversation."

Staten Island group member: You definitely have those people that are just angry, saying, "here's my opinion, and you should agree with me and if you don't, you're wrong." And I don't like to talk to those people. So I really like a group like Staten Islanders Together[12], where the things that are being posted are informational or calls to action.

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12   Name has been changed for confidentiality.

SAFETY

Key questions

What role does "feeling safe" play in the constitution of NYC's digital public space, and how is it achieved? How does the notion of "safety" change across time, spaces, communities, and situations? In what ways is "safety" related to the threat of the virus? How is privacy featured in safety concerns, and how do people frame and talk about it?

A major concern for the people engaging in building up NYU's digital public space was safety. "Feeling safe" was a necessary condition for these spaces to emerge. It was connected to feeling welcome and to belong, a mechanism that often depended on different kinds of boundaries and definitions that were drawn around the spaces. At the same time, the nature of "feeling safe" was continually changing, it was based on both individual perception, group and space dynamics, as well as individual and collective memory and experience.

This changing nature of "safety" was particularly apparent in relation to the pandemic and the timeline of its progression in NYC. Within the digital public spaces, familiarity and recognizing known others increased the perception of safety. Being a "regular" sometimes translated into taking on new leadership roles within these digital communities.

"Safety" was also related to physical safety, especially in the context of being at risk of contracting the virus, and affected decisions made by moderators and facilitators about programming. Privacy played a role in terms of "feeling safe," but it was mostly focused on issues of tracking and surveillance. This aspect affected different groups of people in different ways, depending on their socio-demographic, the practice they engaged in, and the technology they used.

"Feeling safe" is an absolutely essential condition for digital public spaces that thrive. The perception of "being safe" in many digital public spaces and communities was connected to being welcomed into a space, and to "belong." Such safety or belonging was constituted by the different kinds of boundaries that were drawn around these spaces.

As might be expected,some of these boundaries manifested along the fault lines of class, sexuality, race, age, disability, religion, gender, etc., and the intersection of those. This was the case for both access and inclusion, in implicit and explicit ways. For example, one Brooklyn running club was explicitly for Black women, whereas one of the Staten Island Facebook groups was for anything but political discussions.

The feeling of safety often was integral to how the digital space was defined. For the Latinx open mic, having a safe, celebratory space—where one could be vulnerable—was at the core of what made the venue feel special to community members. Such safety was also what sustained the space over the pandemic. The poets shared how personally invested they were in the space, and how crucial the open mic events had been for their emotional well-being over the course of the lockdown.

Queens Town Hall community manager: For better or worse, I'm not leaving my neighborhood if I don't have to. I feel bad, and I feel like a bad friend, but that stuff still stresses me out—I'm not going to be at that park hang or in your backyard. I'm still going to be stressed out. So that added anxiety about doing stuff that everyone else is doing.

The nature of "feeling safe" was continually changing. In what ways, and under what conditions, people felt safe was not stable, but changed based on individual perception, experience, and interactions.

Such "safety" was also very specific to the particular community and digital space as people brought different experiences and safety needs to digital public spaces. The gatekeepers of the digital public spaces were often acutely aware of that, and worked towards creating what they perceive as a "safe space."

For example, the Staten Island LGBT Council leadership was very explicit about their desire in "protecting" their community members, particularly from the heightened social isolation that their members now experienced in lockdown, because of the lack of interaction with other community members. Similarly, the Staten Island Facebook group moderators were very aware of the ways in which their enforcement of discussion guidelines could create a sense of safety among members.

Queens Town Hall community manager: That's the neighborhood [in Queens] where I'm not comfortable walking through with all this kind of unrest. There was a protest and a march every day basically [in May/June 2020]. Maybe I'm being a little hyperbolic. But I didn't want to give anybody a reason to stop me in the street. It's like an easy enough walk, but you never know what happens. So I think that was the only time where I was really cognizant of being a person of color in this time.

Staten Island group moderator: The whole thing about personal attacks, I just really, really frowned upon that. Because I do want

the members to feel safe. I want them to feel comfortable and I want them to discuss ideas; to talk about certain things, whatever they may be.

Privacy played a role in how safety was perceived, but not a dominating one. People tended to frame privacy in terms of being, or not being, tracked and surveilled. Such fears of tracking appeared to be heightened in the pandemic, as people moved much of their social interaction online.

Sometimes, these issues around digital privacy and safety directly translated into physical safety. For example, for the Brooklyn running group, safety and privacy concerns related to locatability. During lockdown, runners had to run alone, while sharing their runs via tracking apps, such as Strava, that disclosed their routes and location. Using these tracking apps posed a disproportionate risk to women, and particularly women of color, whose movement in physical public space were disclosed publicly. For example, being in this demographic put these women at a higher risk of sexual

assault[13] and having their locations in public space disclosed publicly could potentially facilitate a planned attack.

Familiarity and recognizing known others increased the perception of safety. Knowing other people in the digital public space, and in the community, largely increased the perception of safety. People recognized and got to know each other. One way this occurred was that people started to acknowledge each other in the chats of the different platforms, often expressing excitement about seeing other "regulars."

As social presences became thus known online, the level of intimacy grew within a space, trust built up, and, sometimes, such "regulars" started to take on leadership roles. For example, in the Pokémon Go group, users that frequently joined the collective game also became resources themselves, helping to coordinate within the groups across the city.

Some communities created digital public spaces that were mainly comprised of people (often New Yorkers) who already knew each other in person. But the lockdown also created a new dynamic, whereby people met for the first time in a digital public space, developed a feeling of familiarity and safety entirely online, and built up community through it. For example, the Brooklyn mutual aid group emerged after the lockdown was put in place, as did the Staten Island Facebook group that focused on information related to the pandemic.

Physical safety, especially from the virus, was a main theme across NYC's digital public spaces. Many community members

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13   New York City Alliance Against Sexual Assault

expressed concerns about being safe from contracting the virus. Moving through physical public space was newly perceived as stressful, since people were afraid of getting COVID-19, but also of putting others at risk.

Brooklyn runner: Probably what I miss most is the energy of being in a crowd in the city and not feeling anxiety over it.

Queens Town Hall community manager: I miss walking down the street and not feeling anxiety or frustration with everyone out now. Because it's kind of a nightmare, now everyone's out. I'm not comfortable to just get bread… I like this baker and I know the counter girl, she knows me. I know my butcher, but those dedicated stores, they don't have space. So I'm not comfortable with four other people ordering, even though it's socially distant.

These kinds of safety concerns were also prominent among organizers and moderators, and, therefore, were embedded into their conceptual framing and narration of the digital public space. For example, the leadership of the Queens synagogue announced early on that the High Holidays services would be held virtually this year, in order to contain the spread of the virus. This decision was framed in the Jewish value of *pikuach nefesh*—or, "saving a life"—indeed, the leadership argued that *pikuach nefesh* allows for almost any Jewish law or practice to change.

Sometimes, safety concerns related to the virus even became the raison d'être for some of the groups and communities. For example, one of the Staten Island Facebook groups was founded expressly to get information to Staten Islanders about the pandemic, as well as provide a platform to local organizations providing resources.

Staten Island group member: In the beginning the group was mostly, here's where you can get tested, here's who's allowed to get tested. And now it's more: here's all the testing sites and here's the phone numbers. And then also here's the restaurants that are open. And so it's a COVID [resource network]… And it's all, obviously, since the pandemic started. That was a great page. Being so isolated, living alone, working alone to begin with, and then to not be able to socialize the way I did: it was a great page to see, "Oh, look, there's other Staten Islanders who are in this with me."

Safety discussions around the virus became particularly heightened in the context of reopening schools and universities. In response, some members of Brooklyn parent groups discussed the possibility of private learning pods, along with the issue of how to manage the spread of the virus within the pod (for example, through testing). This discussion also included concerns around inequality; some members commented that private learning pods could exacerbate inequality in their local community, since some children would have access to schooling, and others would not.

Brooklyn runner: I was feeling hesitant and uncertain about eating outside in public spaces and not feeling safe or worrying about other people, not feeling safe because of me. And that I might be a threat that was also really uncomfortable. So it made me run less than I normally would have.

LOCALITY

Key questions

How were local, place-based publics situated and constituted? How did online events allow for new geographic connections? How did understandings of space and place shape online publics? How were physical public spaces experienced during the pandemic? Were virtual or online spaces truly accessible from "anywhere?"

Daily connections became denser and localized while simultaneously expanding geographically, hyper local yet more global. As everyday life moved online for many during the pandemic, places that were local to New York—churches, synagogues, community centers, businesses, meet-ups, neighborhood groups, libraries, gaming groups, yoga studios, civic centers, and so on—became accessible to participants anywhere. In practice, access to digital devices and platforms depends on unequal tech literacies and material resources. No online space can truly be said to be accessible to "anyone" or "anywhere." Even so, events and social spaces online allowed people not in New York—or not in a particular neighborhood or borough—to participate remotely.

Consequently, online public spaces became comprised of multiple geographic connections, simultaneously local and translocal, even global. Even so, many events and communities remained tied to local places and spaces.

Local publics took place online through social practice. Local and community organizations maintained ties to place through social practice, vernacular knowledge, and speech that situated online practices in New York-specific places.

Staten Island group moderator: A lot of these pages were like sister pages. One called Helping Hands is more for donating goods. It could be anything: food, clothes, furniture. It's got a lot of traction recently. It's great. There's a lot of disenfranchised people. There's a lot of people that have gone through bad times, especially with the pandemic. So it's been such a nice page. It's very positive. So, yes I follow some of those. I'm trying to keep it as local as possible.

At the Latinx poetry open mic night, participants referenced ways of speaking seen as specific to New York, even while the event expanded geographically through Zoom sessions. One weekly theme was devoted to the phrase "what had happened was," as a "thing New Yorkers say." The host jokingly referred to this theme after a performer's phone froze: "What had happened was... the phone changed." Explicitly referencing New York specific phrases located the open mic's Zoom events in the city broadly, though not to a specific neighborhood or area.

Other language practices online linked the Zoom sessions to the actual venue in Manhattan where poets had performed before the pandemic. One night, for example, a new performer was asked whether she'd

been to the venue before the lockdown, and the host said: "I have a tradition and the people know what's coming. I have to ask you, since you live in NYC even though not currently there. Have you ever been to [the] [venue]?" Because she had, others cheered and clapped, and posted in the chat: "SHE PASSED" and "yasssss." For the host, place-specific indexical language such as "here" referred to both the open-mic events on Zoom and the now-closed physical venue, collapsing the offline and online spaces.

For a yoga studio teacher based in Manhattan, in contrast, "here" always referred to the shared virtual space of live yoga classes, based in participants' living rooms, not the actual studio. For the Manhattan gaming group, "here" could refer to the shared space of their Discord channel or players' specific locations in NYC, whereas "there" referenced the lost public park where they previously played. At a Queens drag-themed game night, two new participants found the event not through connections to the actual space, an LGBT center, but by searching on Google for "LGBT" and "Queens." Place-based practices in these ways unfolded in online spaces, situating them at multiple geographic levels.

Queens town hall community manager: How, as an arts council, can we support the artists in our community? We can define it. Typically we defined it as just [neighborhood] or just Queens; but now, for better or worse, we have people who aren't tied to Queens that can go in and just see. So that's the next puzzle.

Online spaces were shaped by geographic imaginaries, how people imagined and envisioned place. Many publics and communities were organized at varying geographic levels, such as neighborhood-based, borough-specific, city-wide, or national.

Running clubs, for example, were formed at multiple levels: there are citywide, NYC-based running clubs, borough or area-based clubs specific to particular parts of Brooklyn, such as North Brooklyn or Prospect Park, and national organizations specific to people of color (with local chapters). Yet these levels didn't always correspond to where members lived or ran. One member of a Brooklyn-based running group lived in the Bronx, but after the pandemic began, began running near her home instead of joining club runs in Brooklyn.

The administrator of one NYC group's Facebook page was living in the U.S. South, but inhabited ties to New York through the running club's Facebook page. She identified with the geographic space of Brooklyn, inhabiting multiple places through online practice.

For players of a place-based digital game, the pandemic meant few played in a public park and instead played near their homes. But the game assumes consistencies in the shared space of game play, even though it's played over mobile phones. Weather discrepancies, for example, could disrupt such shared play and shared imaginaries, leading players on Discord to ask each other things like "is it raining in your game? What city are you in?" The pandemic didn't prevent people from playing online or chatting over Discord, but reworked the shared ways they had envisioned the space of the game.

Brooklyn runner: The friend that lives in Florida joined my online classes, which

HERE

HERE

they used to do in person. She joined their classes on Zoom and then just one day out of the blue said, "do you want to work out together?" So we picked Friday mornings to work out today.

Public spaces expanded online to include translocal and global ties, collapsing physical distances. Although many sites closed their shared, physical locations, such as churches, cafés, libraries, and LGBT centers, hosting virtual events and activities expanded who could participate, particularly participants or others with existing ties who lived elsewhere.

The boundaries of what's considered "New York" or not New York expanded, as driving distance mattered less than time zones, and even those weren't always barriers. In Brooklyn, the 60 Brooklyn Public library branches—key public community resources—were forced to close. In so doing, many families, children, seniors, and others—often those unemployed or relying on government services—were deprived of wireless Internet access, computer programs, story time, and classes, not to mention print books.

Yet, according to one librarian, virtual events reached people normally unable to come to the library. The intensely local nature of the library was reconfigured by these virtual events, with attendees from "all over the US" and overseas. As such, the boundaries of communities shifted, even if only temporarily during particular events.

Staten Island Walking Tour organizer: The first three or four virtual walks that we did, [my friend in Arizona] got up at five in the morning to go and drive to this place. So she'll be able to position herself before the

heat came up and she'll give us a virtual tour of wherever she went. It will be nine o'clock or nine thirty for us, six or six thirty for her, you know? And she can do the walks. And I would walk Prospect Park. I had another friend, she was in Pennsylvania. So we all have our cameras, so instead of seeing faces, you saw different places. We were walking, like that. So if I saw something in Pennsylvania, she had said, I gotta show you guys this field. And she showed us this big field, you know, and she's telling us a bit about that field.

Physical public spaces were often experienced as something lost. Many community and neighborhood spaces moved their events online, expanding across platforms they had inhabited little if at all before. For these events and institutions, like places of worship, community centers, or local clubs and associations, their closed physical spaces were regularly referenced online, often in terms of nostalgia and loss.

The Latinx poetry venue in Manhattan, for example, continued to hold weekly open mic nights over Zoom, but participants referred continually to the actual offline space.
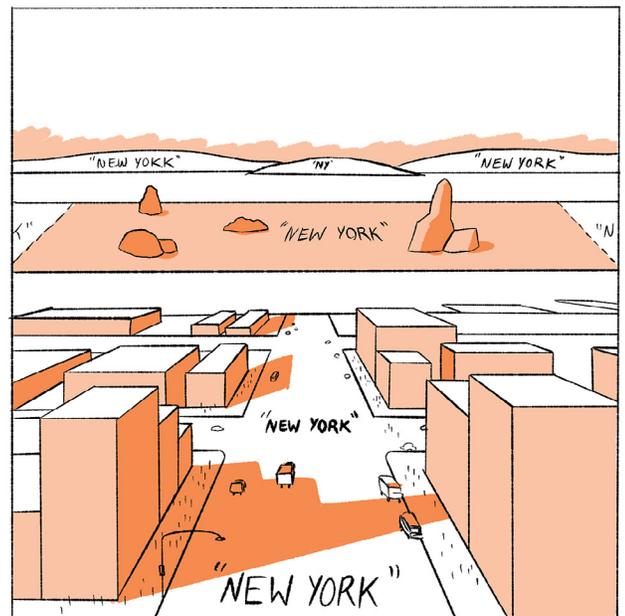
At a Queens LGBT center game night on Zoom, many participants described missing seeing each other at the actual game night, held at a bar. One participant introduced himself saying he was "from [the bar]," indexing both his longtime connection to the event and his nostalgia for the lost space of the bar. The Staten Island LGBT Council closed to the public in March, instead hosting events online. The center announced that it was opening a "Virtual Front Desk" and that all programs and services would take place on digital platforms "until further notice."

Houses of worship, like the two Bronx churches and Queens Reform temple, moved services online, in some cases streaming them from the actual pulpit. For the Ghanaian Pentecostal church, which rents its space, locating services in the space of the church was particularly important. They reopened and encouraged members to attend physically as soon as allowed.

Although the Reform temple moved entirely online, the Rabbi worried about the upcoming High Holidays, and how congregants would experience fasting during Yom Kippur while home, rather than in services at the synagogue building. Synagogues, churches, and other houses of worship are often seen as sacred or liminal spaces, whose hallowed character is grounded in the physical space of the sanctuary. Although services over Zoom or livestream recreated connections between community members, the sanctified space was not replicated online.

Bronx pastor: One of the most important things about the church is not just having a church and having a congregation. It is also the ability to have the members to be able

to help secure the place. Such that, every month, every year, people can still come in and worship. I feel bad for other churches that have closed down. But, to God be the glory, we had other people who were very supportive and we had people who were working and they were still [supporting] the church in any way that they can.

Virtual-only spaces were still place-based.
Many place-based publics moved from offline spaces to online platforms during the pandemic. Yet at the same time, publics that had always taken place virtually were grounded in and shaped by place-based practices.

New mutual aid groups, for example, formed in response to the pandemic, alongside extant ones that shifted to providing pandemic-related support, such as grocery delivery and food assistance. Many of these new groups were started as Facebook groups or over email, and conducted most organizing online.

In other cases, neighborhood Facebook Groups were repurposed as mutual aid and support groups. Although one website, mutualaid.nyc, aggregated a list of New York based mutual aid groups, the majority (if not all) were neighborhood-specific. Members of one Brooklyn regional group, for example, were sorted into smaller neighborhood-based pods to pool resources and coordinate donations and volunteers. Volunteers, usually financially stable, assisted others on their block or area, particularly to those food insecure, isolated, elderly, unwell, or laid off. Although coordination took place over Facebook, each neighborhood pod created a private page to coordinate and to track progress providing for members in need. These groups, despite being

online, were also difficult for non-residents to access, requiring local ties.

Brooklyn mutual aid volunteer: It was an interesting process: trying to get the fridge up and running, and getting organized; but also keeping it community-centered, and not making an us-versus-them situation. So eventually email is getting a little hard.

We started a Slack group. So now there's a Slack group where people have various levels of commitment to the fridge and when there's big pushes that we're trying to get: for example, now a community member just made some flyers. So right now, we're trying to get people to get the flyers out.

AFFORDANCES

Key questions

How do platform affordances provide both possibilities and barriers to public participation? How do affordances[14] of technologies shape the expression of individual and collective identity? In what ways do technological affordances inform new etiquettes for digital public space? How and why do people sustain both the digital public space and their practice across different platforms?

The technologies that New Yorkers used to continue their social practices and to build up digital public space afforded new possibilities, but also new barriers to participation and belonging, a dynamic that played out differently across different communities. Particularly disabled or elderly community members sometimes were excluded from participating in some of the new digital public spaces. But sometimes, the fact that communities, practices and public spaces became digital also provided new access.

At the same time, particular affordances, such as the Zoom name function, shaped the expression of individual and collective identity and participation. Here, the possibility of anonymity sometimes served as a gateway for increased participation, especially for teenagers. Knowledge and control of platform affordances played a central role in how publicness was constructed, perceived and maintained.

Participation in the new digital public spaces also required the development of new etiquettes that were community-specific and guided social interaction. And communities switched platforms, often based on their differing affordances, or built up an ecosystem of integrated platforms.

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14   Affordances are "the quality or property of an object that defines its possible uses or makes clear how it can or should be used" (Merriam-Webster Dictionary entry on "affordance")

Technology affordances created new possibilities but also new barriers to participation and belonging. This dynamic played out differently for different groups.

For example, for some disabled people, online activities were more accessible; but at other times they excluded those who had been able to participate in co-present events. One autistic Brooklyn librarian, for example, viewed the shift positively, because she preferred online communication and running sessions online.

But in other spaces, disabilities that weren't addressed could make participation more difficult. In a Queens LGBT game night, one participant requested a play style or game that didn't require pressing buttons, something she couldn't do without a home aid who had left for the evening. But the next week, a promised new game hadn't arrived in time, and she expressed her frustration to the organizer. Making online spaces accessible generated new challenges and tensions for organizers and participants alike, sometimes making visible disability in new ways.

Other barriers to participation were also sometimes thrown into sharp relief, such as tech ownership or savviness. Some communities were able to smoothly recreate their spaces online, because they built on existing technologies and knowledge. For example, the Bronx market organizers were able to smoothly use and integrate different platforms, such as Twitch and Facebook, to maintain their space online.

For other communities, this required a larger organizational lift, especially with regards to providing equitable access. For example, the Queen synagogue community was concerned to not exclude elder members of the community from services. So it deployed volunteers to supply the elder members with the technology and technological support they needed in order to participate in the Zoom service. Here, it is important to note that individual community members rarely had a say in what platform should be used to facilitate their social practice.

Brooklyn librarian: That's essentially why I do the face-to-face [online book club]. So that you can read people's facial expressions as they're discussing. So that you can at least read their face and seeing what they need. Because I have a disability where I have a hard time reading body language and tone of voice. There's a lot of times when I'm reading a text one way, and everybody else doesn't see it that way.

Queens Reform temple education coordinator: I'm using more FaceTime. I'm using more Facebook. I'm posting on Instagram, since the younger family members are not on Facebook. They're all on Instagram and Snapchat, so those pieces are more active. I'm more active in those areas. I do use Zoom actually to do our Seders. Those were the kind of things that we're using personally, because they work for us.

The technological affordances of the platforms shaped the expression of individual and collective identity and participation. People become acutely aware of what certain platforms would allow them to do, and what they would not. This affected the curation of identity and publicness, such as with regards to gender identity. For example, people would use the edit function for the Zoom username in order to make their preferred pronouns public (e.g. "Lucia Smith (she/her/hers)").

This particular affordance of Zoom expanded beyond gender identity, and, indeed, unfolded into how the collective element of a social practice emerged. For example, Zoom accounts that were jointly used for a certain practice, such as worshipping, were used to signal a social unit, such as "Family X." Some congregants in the Queens synagogue used the Zoom name function to signal their family unit when they used one Zoom account to participate in a service.

Relatedly, the possibility of anonymity afforded by technologies affected participation in virtual vs. physical public space. For example, a creative writing professional, hosting a creative writing workshop for teens at the Brooklyn library, explained that creative writing for teens has become extremely popular during the pandemic. More participation happened online, due to the possibility of anonymity: "Shy people are more comfortable with participating online. it's useful for that. We make it optional for them to show their writing. Some get more comfortable with it."

Manhattan yoga student: Just that sense of arriving. Right now, it's two seconds and you can log on to a class. There's really no time to adjust and transition from the work day to your so-called relaxation time. Traveling to a yoga studio or traveling home after, there's this transition/adjustment phase where you can actually slowly arrive, slowly leave. Whereas now, it's just so abrupt. It's really hard to experience anything other than just screens.
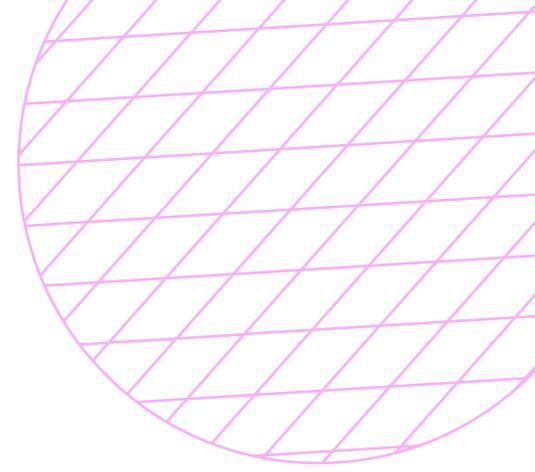
The curation of publicness was built on knowledge and control of platform affordances. Group leaders and event organizers quickly became aware of the possibilities and limits different platforms would afford them and their social practice.

Certain affordances of certain platforms were perceived to be particularly well-suited for certain practices. For example, some members of the Brooklyn running group preferred Instagram over Facebook when posting about running successes. This was because Instagram provided "instant gratification," since it shows notifications of clicks or comments as soon as the app is opened. It thus served the collective goal of "keeping each other motivated in the pandemic" within this community of practice.

Platform control was a similarly central concern, and different platform controls were used in different ways to curate publicness. For example, for much of the Queens synagogue digital service, congregants were kept on mute. This was the case even when reciting the portions of prayers that, if they were in the physical temple, they would normally say out loud. There were only two moments where they were able to unmute themselves: during the mourner's kaddish (said as a prayer for those who have died recently, and in memory of those who

were celebrating a death anniversary) and the *motzi* (prayer over bread that concludes the service). Similarly, the Latinx open mic night only allowed unmuting in moments of performance, or clapping.

Other practices made less strict use of the mute function, such as the Manhattan yoga instructor. The control of muting and unmuting participants was less in the center, and practice, of other platforms. For example, the Pokémon Go group used Discord, a platform that has users not on mute by default so that they can "just talk" to one another.

The Staten Island Facebook group, on the other hand, was very centered on the functionality of possible post deletion through moderators. Therefore, muting was a central element of that particular public space. All of these affordances, and the way in which they were folded into the social practice, affected the way in which publicness was enacted and perceived.

Bronx business owner: The world is already going into a more virtual world. But I think COVID just just pushed us to the edge. That e-commerce is where we should go online. What I've seen now is that a lot more businesses are reaching out to me for branding and marketing design, video websites and stuff like that.

Queens town hall community manager: I found that when there were 20 plus people on a Zoom call, with everyone just trying to talk, that wasn't for me. I like to cap it at five or six people. That's where I found the most ways of connecting. Because, at some point you're at a capacity of being able to have open discourse. After six people or so you're better off just setting up a webinar because there's just too many voices.

Digital public spaces required the development of new etiquettes. As technological affordances shaped practices and vice versa, new etiquettes for digital public space emerged.

These etiquettes were specific to both the social practice and the digital public space. For example, for the Latinx poet space, it was common to be on camera, but muted, while poets were performing; then, when unmuted by the host, the audience was "allowed" to clap. At the same time, however, people were using the chat vividly, live-commenting on words and lines of the poets who were performing, as well as self-reflecting. Here, the chat feature allows for personal thoughts to be expressed "publicly."

The etiquette around the chat function worked differently for the Queens synagogue. Here, congregants used the chat when called to do so, for example to list names of loved one's who died in recent days or the Mourner's *Kaddish*.

In other spaces, the chat was, similarly, used like a public announcement board. For example, moderators for Queens Town Hall events announced that people should use the chat for any questions they may have.

These new etiquettes were closely linked to what was at the heart of the social practice that was enacted in the digital public space. For example, in the Pokémon Go group, sharing information was central to their social practice. In absence of a chat function, the game itself had no opportunity for real-time interaction. The platform gamers used in conjunction with the game, Discord, however, was focused on real-time chat, allowing to minimize the delta between the
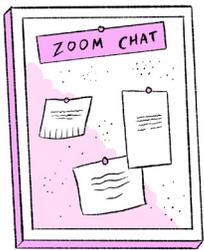
gaps of time and changing conditions in the game in and in real-time.

Queens LGBT drag game host: But I definitely miss just camaraderie. This is nice, talking to you and engaging via Zoom. But it still feels very foreign. And empty.

Queens Reform temple member: I even told the rabbi that I thought Hebrew school was so much better. Through Zoom. How she did it, how she really made them into small classes and sections. I told the rabbi that the kids got so much more out of it, that I'm pushing for them to have Wednesdays virtual, because I just thought it was amazing that they really got a lot out of it.

Different platform affordances led to platform switching and platform ecosystems. The digital public spaces of NYC were not just constituted by one platform on which a social practice was enacted. Instead, the manifestation of a particular digital public space often occurred through switching between different platforms.

These different platforms served different functions, and had different publics. For example, the Staten Island Walking Group used MeetUp for outreach, and Zoom for the events, having started originally on Facebook live. The Brooklyn runners group used social media platforms, particularly Facebook and Instagram, to keep each other motivated and be part of a community. Zoom meetings served more as gatherings to resemble the runs pre-lockdown.

Similarly, the poet group used Instagram as a secondary platform where poets shared their works outside of the open mic

nights. This Instagram community extended significantly beyond the Latinx open mic community, but was referenced often at the open mic nights. Sharing one's personal life on social media sometimes was a sort of prerequisite for group sociability, because social media stories served as important points of conversation in synchronous gatherings.

Platform switching allowed for virtual communities to grow and facilitate access beyond the immediacy of a gathering. Other secondary platforms channels, such as email newsletters or group chats, facilitated this dynamic as well.

Similarly, some digital public spaces were constituted by integrating different platforms. This was more the case for synchronous events and gatherings. For example, the Bronx churches streamed their service through Zoom, but also through YouTube and Facebook. One church also streamed the service through the pastor's individual Facebook page. Relatedly, some communities were able to produce their events professionally and pay staff to facilitate the integration of platforms professionally. For example, the Bronx senior arts center annual exhibition was professionally produced with curated backgrounds and a well organized sequence of presentations.

Bronx Business owner: We just doubled up when it comes to our social media. Our main marketing, like Instagram and Facebook, we just picked it up a notch. We had to go live every day. We're going to post more stuff. We're going to post what we're going through, this and that, and post more merchandise online.

INFRASTRUCTURE

Key questions

How did the digital divide affect the emergence of NYC's digital public space? How did the relationship between technical and social infrastructure change under the lockdown? In what ways did the infrastructure of the "actual" place continue to matter? What domestic infrastructures were put in place? How were the socio-technical infrastructures of NYC's digital public space maintained?

During the lockdown in NYC, unevenly distributed and maintained infrastructure came to the fore. The "digital divide"—meaning access to the internet, as well as quality of access devices, ability to use them at the time needed, and access to the relevant services and platforms—was heightened and expanded. These inequalities were both an individual, as well as an institutional concern.

With the move online, the vulnerabilities of the technical infrastructure became social vulnerabilities, in the sense that technical disruptions, such as outages from the weather, severely affected the ability to socialize. This meant that, sometimes, gatherings were not just impeded by technical difficulties, but actually could not happen at all.

Whilst technical infrastructure became more important, the physical infrastructure of the "real place" did not lose significance. Some "real places" were severely affected by the financial impact of the pandemic; as such, the digital practice of the community, at least in parts, focused on mobilizing resources to maintain the physical infrastructure.

This maintenance labor had various dimensions. Such labor was focused on scoping out and providing digital infrastructure, but also on social and emotional infrastructure.

The "digital divide" became heightened in NYC's lockdown. Different communities and individuals had very different infrastructures that allowed or prevented them from the participation in NYC's digital public space.

Not everybody had access to WiFi in their homes. Even if they did, their connection was not necessarily a broadband connection, sometimes it was unstable, sometimes overloaded because different members of the household were using the connection at the same time. Sometimes, that meant that alternative points of access had to be sought, either because there was no alternative, or because one point of access worked better than the other.

For example, a volunteer of the Brooklyn mutual aid group did not have WiFi at home, she relied on the cellular data on her phone to connect to the internet. A host of one of the Brooklyn library workshops also preferred his phone, but not because he did not

have WiFi, but because the camera in his phone was of better quality.

Access to the internet was just one infra-structural element that showed the digital divide in NYC. Another one element was access to the services, for example a Zoom premium account that allows to host meet-ings beyond 45 minutes.

These infrastructure inequalities had a severe impact on sociality in that they pre-vented or complicated access to community connection in many cases. They also were a deep institutional concern, especially for the Brooklyn library. Librarians worried that the digital divide would be amplified as not all patrons, and not all library employees, had equal access to internet connectivity when the physical library was closed.

Bronx senior arts center staff: A couple of the seniors got savvy to Zoom; she would see them and their work. The ones that didn't she gave them tasks through the phone conference. This was all done early in the shut-down.

As technical infrastructure became social infrastructure, the human connection became more vulnerable. As NYC went into lockdown, the dependencies on mostly privately owned infrastructure infrastructure exponentially increased: fiber cables, com-munication platforms, devices.

The human connection, NYC's social fabric, to a significant extent depended on this technical infrastructure. More than before, it became the necessary precondition for sociality.

With that, technical vulnerabilities became social vulnerabilities: when the technology broke down, the digital public space broke

down. For example, over the summer, NYC saw heat waves and storms that severely disrupted the internet connectivity in some boroughs, causing communities to be un-able to convene in their digital space. These issues cut across class lines and affected both affluent and poor communities, albeit with disproportionate impact.

Queens Reform temple education coor-dinator: Some of my teachers are not tech friendly, savvy, any of those words. So it was really important for me to make sure that they felt confident in what they were doing. My goal was to be able to give them time in this kind of a forum and have other teachers. They had to support each other as well, because I think that it's important for them to be a community as well.

The infrastructure of "the actual place" still mattered. Despite the "move online," communities continued to be invested in and connected to the infrastructure of the physical space, to a varying degree.

This became visible as the pandemic, and its socio-economic impact, threatened to impact this "actual" infrastructure. Very often, this played out in terms of loss of income. For example, both the Queens synagogue and the Bronx churches were affected by the loss of dues due to services having moved online. Both institutions developed narratives around the need for congregants to keep paying their dues, as part of collec-tively fighting the virus.

But the threat of the virus also affected how this "real" infrastructure continued to be used. For example, as socially distant services resumed in the Bronx churches, parking became an issue, as congregants sought to avoid public transport.
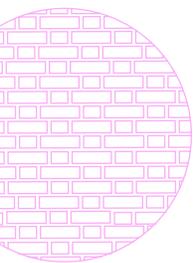
Bronx business owner: I bought a mic and a little light and stuff, for Zoom. Cause I'm doing a bunch more Zoom, like speaking engagements. I had to get a new laptop too, actually. So I did get some new equipment for all of this.

Socio-technical home infrastructures came to the fore. As people's homes became the site of their participation in digital public space, individual socio-technical infrastructures became increasingly important.

These infrastructures were not only made up of technical devices and connectivity to the internet, but of a whole assemblage of different technical and social arrangements. For example, people's "space within the home"—that is, where they were actually located within their home and whether this space afforded them privacy—came to matter. So too did how good their internet connectivity was; if their camera worked with the lighting; and if there were disruptions due to their domestic arrangements, such as family members or pets disrupting their participation.

The way in which these elements combined was linked to the particular social practice people were engaged in. For example, worshipping could be a family matter. But the practice of exercising (such as yoga, running) was a solo effort, and, therefore, required a completely different assemblage of home infrastructure.

Manhattan yoga instructor: Of course, the first thing is not everybody has props. They don't have a wall. They don't have a chair. They don't have any blankets, they might have a strap. They might have blocks.

Queens Reform temple rabbi: Another big physical change is everybody's in their own home. For the most part, people dress to a level of, of decorum at the service, but not on Zoom. People come in whatever they're wearing. People are sitting in various spaces that are very casual and not really in a holy sacred space, because they're in their house.

Maintenance of the digital public space became labor. The maintenance of the *technical* infrastructure was, for the most part, out of the communities' hands, particularly when it came to access to the Internet. But some communities still worked to provide their members with the needed access points and infrastructure. For example, while many communities relied on Zoom, the Pokémon Go community used the Pokémon Go app itself as well as Discord, a platform very popular with gamers, to establish their digital (game) space. The maintenance labor also included emotional labor and practices of care. For example, remembering and celebrating birthdays of community members.

Queens Reform temple rabbi: For the most part before the service, everybody got there on time. And you checked in with everybody who was doing something, there's no real technology that needed to be done, and you just did it. But now there's so much, there's no checking in with anybody beforehand. So you have to figure things out. You could chat on a Facebook thing. But those chats get lost. So you have to text people. Right now, I've gotten seven texts while we've been on this call and one WhatsApp. That's not so bad. And like a million emails. But I've never used my phone during services before in my life.

INTIMACY

Key questions

What was the role of online spaces in addressing feelings of isolation? How did private and public interactions come together in online spaces? Did public online events transform experiences of home life? How did digital technologies support or undermine practices of intimacy and care? How did people in virtual publics respond to the emotional and physical challenges of the pandemic to health and wellbeing?

The pandemic and shelter-in-place orders upended everyday life for many people and communities, forcing many people home, closing schools and offices, and ultimately triggering massive layoffs, especially in the city's service industries. Digital platforms and services provided lifelines, allowing for remote work, education, and events, often in the context of intensifying isolation. The emotional and affective dimensions of the pandemic played out in different ways across platforms and technologies. Isolation was a significant theme, especially for elderly and single people, even for those able to keep working.

Yet many people enjoyed being able to participate virtually in activities they might not have had time for before. Technologies like Zoom brought many public events and activities into people's homes, reconfiguring experiences of public versus private. Platforms and interfaces could forge intimacy in some instances, often dependent on the context at hand.

In contrast to conceptions of online activities as immaterial and disembodied, bringing events into people's homes often meant engaging in embodied practices—praying, yoga exercises while on camera in one's living room, singing or listening to singing—all over Zoom. Pastoral leaders, yoga teachers, community members, and others enacted practices of care in new ways. And they did so even as participants managed new interruptions—children, roommates, pets—which wove home life into virtual public spaces.

Virtual publics both ameliorated and exacerbated experiences of isolation. Isolation was a recurring theme for many participants, especially for those living alone. Screen-based activities could mitigate such isolation, but also intensify it. Mental health and emotional wellbeing were of particular concern for seniors, LGBT people, and others who already experienced ostracization or marginalization. Indeed, many of the centers and organizations existed, in part, to respond to these pre-existing issues.

Two LGBT centers, one in Queens and one on Staten Island, for example, organized game nights, socials, and other events before the pandemic to provide collective support. "The LGBTQ population," one director explains, "experiences a variety of disparities and challenges, including social isolation, when we are living in 'normal' conditions. The COVID-19 pandemic has exacerbated these disparities and stressors."

A drag game night at the LGBT center in Queens provided continuity and connection for center participants. So too did a weekly series of videos, devoted to topics like mental health during COVID-19. One guest, a clinical psychologist, recommended limiting screen time, especially social media, and also emphasized the importance of seeing others in person (while being socially distanced). Another guest, a drag queen, shared how important it was to her to see her friends and LGBT community members in person, even if they couldn't hug or touch.

For the Queens Reform temple and Bronx pentecostal churches, providing community connection is central. According to the temple's rabbi, maintaining familiar rituals—as close to their previous physical versions as possible—was key to maintaining "normalcy" for congregants. It was thus a priority to recreate the synagogue—with the clergy, other congregants, and traditional practices online—so as to dampen experiences of disruption.

Such support was particularly important for those who had lost their livelihoods or family members to the pandemic. In the Brooklyn running clubs, themes of resilience and motivation surfaced on social media as social media became a "place" to express and enact aspirational feelings and states.

Bronx pastor: Before, you know, we used to have a party in the Holy Ghost. We used to dancin', 'cause, you know, as the Bible says, "David dancin' and he went naked to express himself to the Lord." And, you know, we'd dance, because we really played the instrument. We play the music and, you know, we have a great choir singing, and we ministering to the Lord and we'd dance, express our joy and our gratitude to God. But now… it's no longer that, you know, now it's like people are standing by their chairs and they are just shaking themselves and it is quite … not easy and not comfortable. But that, that is how the world is going now. So we kind of float with it.

Queens Reform temple rabbi: Community is a big piece of our services. There isn't that. There's chatting with people, both verbally and in the chat box. But there's no *Oneg* after the service to stand around talk to people and have a cookie. And that's a big loss people, really like that. It's hurt participation. We're a very participatory congregation.

Home life came into new relation to public life. Public and semi-public events, which now took place through video conferencing tools like Zoom, brought personal or private spaces into shared spaces online. Although some events were broadcast from a physical location such as a church, in most cases, hosts and participants joined in from living rooms, bedrooms, kitchens, home offices, or occasionally, outside. The most popular platform, Zoom, allows people to call in using a telephone. But most connected on computers or through mobile devices like tablets, even if they then turned off their cameras (a common practice).

Everyday, often intimate relations intersected online with public practices, from washing dishes to hugging children to caring for pets. In the Manhattan yoga sessions, home décor was visible to participants who normally meet in the co-present studio, revealing airy, curated interiors that belonged to clientele of primarily middle-class white women, as indexed by aesthetic styles and sufficient space to do yoga. At the poetry open mic night, many people turned off their video cameras, creating privacy even as many enacted intimacy and affective connection through comments in the chat.

Brooklyn runner: I'm naturally an introvert, I normally don't like to talk about myself. So when it comes to me posting things, it really has to be me really wanting to post it and letting people know that I'm doing it. One time I posted something and I got a response back that said, "you inspired me to run because of what you did." And I thought, wow, to know that my running inspired a total stranger, that's a very cool thing to do.

Embodied, private practices took place in virtual online publics. Bodies came into new relations online, through video-conferencing in virtual publics. Although embodied activity is a hallmark of physical interactions, digital spaces are often imagined in opposition to bodily experience: as a space only for symbolic and written communication.

But as events took place on Zoom, many bodily practices were retained, so as to create feelings of normalcy, continuity, and connection. At the Queens Reform temple, the rabbi described how important it was to continue regular ritual practices, as a means of constituting the congregation despite the lack of physical sanctuary. During Friday night Shabbat services, for example, members covered their eyes, stood, bowed, and even sang despite being on mute. In so doing, they enacted prayer as they would in the physical space (often at home with other family members doing the same). After the service, many stayed online for oneg, the informal celebration of Shabbat, with the rabbi telling congregants to eat whatever they wanted and had on hand at home.

At the Manhattan yoga studio, the teacher required cameras to be on to teach effectively, so she could see people's poses and make corrections as necessary. This made the virtual yoga studio a space where private spaces were made visible in order to perform embodied practices. Here then, the materiality of the home space was a necessary component to the social practice.

Manhattan yoga instructor: It's not that I think the teaching is any less. But there's something emotional—about being in the presence of your teacher—that is missing for me when I try to take classes. I do take their classes online, but it doesn't soothe me.

Intimacy and care took place in new ways through digital tools and devices. Care and intimacy were produced in multiple ways online, through embodied practice, but also through other ways of adapting tech tools and features.

At the Latinx open mic night, many participants, especially non-performers, left off their cameras, keeping their personal spaces private, or at least non-visible. But other norms and practices could foster feelings of closeness and intimacy, such as emotion-laden, densely overlapping chat conversations (through the Zoom chat feature, a separate window which some people may or may not see while focusing on videochat). Other elements of the open mic night produced intimate sensibilities as well, such as deeply personal themes around sexuality and eroticism (one night's theme, "first kiss," engendered sexually explicit poems, albeit sometimes in metaphorical language). Participants responded with enthusiasm and support in the chat, engaging shared affect. At other times, poets expressed vulnerability and emotional openness, which was met with similar support. Interviewees shared how personally invested they were in the open-mics, and how crucial they were for their emotional wellbeing during the lockdown.

At the Reform temple, intimacy was fostered instead during and after services, during what would have been a social hour in the synagogue. During services, congregants typically stayed muted and did not text much in the chat, but before and after, many talked over one another (over voice) and made plans to catch up later—"call me tomorrow" or "let's talk soon"—rather than try to have semi-private conversations in semi-public space.

Others found new ways of maintaining personal relationships such as online dating, such as a Brooklyn mutual aid member, who appreciated being able to do so from home, and a Brooklyn librarian whose boyfriend bought her a game console so they could play together without endangering his elderly mother.

Brooklyn librarian: So we do play video games together a lot [remotely]. That actually helped a lot because, before that I was having a lot of issues being alone. I'm a person who requires physical contact.

Logics of care and wellbeing were centered in many virtual public spaces. Health and wellbeing were already important themes in many of these communities and spaces before COVID, including LGBT centers, churches, the synagogue, community organizations, and the yoga studio.

But the pandemic induced new pressures, such as job loss, illness and death, food insecurity, physical isolation, loss of social support networks, risk of exposure, and anxiety about the future. Existing spaces like religious centers and LGBT organizations addressed these themes directly through existing and new programming, while new communities took shape such as mutual aid groups on Facebook.

The Queens LGBT center hosted a Guided Meditation, where one participant expressed his anxiety over returning to work at a bar. The center also organized a weekly TV-style video series, including a webinar with a clinical psychologist who provided tips and resources for mental health.

In another episode, the theme was retro and nostalgia, with two TV producers discussing

the popularity of reboots. One email from the center included a "signature file image," describing the center as "Your Virtual LGBT Council," offering virtual programs and socials to help you #BeYourself, #StayHealthy, and #ChangeTheWorld.

Virtual connection was linked with health and self-care. At the center's drag game night, one participant had for weeks left her camera off. One evening she finally turned it on, saying she felt comfortable enough with the community finally to "come out of my shell a bit more." Another drag queen, discussing self-care on the center's TV series,

said that the first time she performed after the lockdown, she cried.

Brooklyn runner: Going to Strava and looking at the timeline was also less exciting because there was just less content... Oftentimes it was very clear when people were also checking in just because they were stressed. That's sort of gratifying to see other people who are going through the same experiences, but also kind of depressing. It wasn't an escape really, if you were scrolling through and just seeing other runners that were anxious, just like you… Overall, there was also less, I feel, to interact with.

TEMPORALITY

Key questions

How were experiences of time related to maintaining community during COVID? How did online communities and spaces experience change during the pandemic? How were temporal possibilities for interaction experienced? How were experiences of time (and space) distorted during the pandemic? Why was the pandemic also experienced in linear ways, timewise?

As the pandemic unfolded in late February and early March of 2020, experiences of space and place were inseparable from shifting experiences of time. Some people reiterated the sentiment that "time and space have no meaning" during the lockdown, or that time felt elastic, expanding or contracting unpredictably. For others, each day seemed the same as the next, blurring together without daily commutes, errands, shopping, eating out, or get-togethers to structure time.

The pandemic itself was often narrated in temporally specific ways. Some were narrated as points on a timeline, the moments from when many workplaces and schools went remote to official shelter-in-place orders. Others were narrated as a rupture, marking a "before time" and a surreal present. Digital technologies and platforms often extended these narratives and experiences, or were themselves imagined in temporal terms. Many communities and groups endeavored to preserve a sense of continuity between pre-pandemic co-present events and online ones; in other cases, the pandemic allowed for new kinds of events and practices.

Digital interactions were also framed according to the binary of synchronous/asynchronous, a temporal framing often undertheorized in design studies. Yet time, even more than space and place, was often what grounded online events and experiences in embodied space. Such times included things like time zones, or daily schedules: caring for children, preparing meals, walking dogs, exercising, meetings.

Digital spaces could both extend and recreate pre-pandemic experiences of time. But they often reworked everyday rhythms, in ways that became central to what the digitally mediated experience of the pandemic was.

Continuity was central to maintaining many communities. Continuity was maintained in multiple ways, both through practice and conceptually. For many organizations and communities, continuity was a key goal in moving events and spaces online.

Religious services, such as at the Reform temple in Queens or pentecostal churches in the Bronx, reproduced physical services as closely as possible. These services were even held at the same times, but slightly altered to reflect the technological affordances of Zoom (less chatting, less socializing before and after, muting all participants much of the time). The Reform rabbi articulated this link between continuity and community, and the importance of sustaining co-present connections in online contexts. But he also enacted this temporality in his personal life as well, such as meeting friends regularly during lunch— more often, actually, than he had previously.

The Latinx open mic event, yoga studio sessions, and Queens LGBT drag game night similarly took place at the same times as the original physical meetings had, and according to a similar schedule and tempo. At the poetry open mic night, for example, performers signed up the day before; if more people signed up than there were timeslots, they were added to a waitlist, to

perform if time allowed. At the end of one yoga session, the teacher explicitly thanked her students for "continuing to join the class virtually."

These regular temporal rhythms, along with embodied and material practices, fostered feelings of continuity with pre-pandemic practices. And they did so often with the stated goal of maintaining stability and normalcy. Temporal continuity was seen as key to minimizing the disruptiveness of the pandemic, from Friday night Shabbat services to weekly open-mic and game nights.

Manhattan open mic host: The [Latinx open mic venue] has been closed because of coronavirus. Not sure when we will be opening but we will continue to do this online.

Change was a constant. Online communities and spaces morphed over time, shifting and adapting as organizers and participants learned more about the different tools and platforms. Despite efforts to maintain continuity through regular, predictable scheduling, change was a constant. There was change to adapt to changing circumstances, and change as organizers experimented with different ways of doing things.

At the Reform temple, for example, the rabbi moved away from using breakout sessions

but took up PowerPoint. More challenging was trying to anticipate the future during the pandemic, and whether to plan virtual services for the High Holidays, the major Jewish holidays that typically fall during September. An email from the temple leadership couched the proposed plan to hold services online in the Jewish value of *pikuach nefesh* ("saving a life"), which allows for—or even requires—almost any Jewish law or practice to change to protect human life. The necessity of change for maintaining life was grounded here in Jewish thought and tradition.

In other sites, such as the Latinx poetry open mic night, technological choices themselves were linked to temporality and change. Most performers shared their "socials" (that is, their profiles on social media), as a way to build an audience. The younger performers typically spent time on Instagram, often fostering a smaller community of open-mic performers there.

But older performers were more likely to have personal websites or only share email addresses, a detail that locates their digital practices in the past. One week, a performer who had previously shared a Tumblr account (a social network site popular with teens and alternative communities in the early 2010s), finally announced that he'd created an Instagram account, news that was warmly received. Space online, then, took on historical dimensions; cultural practices shifted through memes, social network sites, and sharing norms.

Queens Town Hall community manager: Spontaneity is the biggest thing that doesn't exist anymore. I am planning the day, trying to navigate my work schedule, as well as, unfortunately, the weather now. I'm going to the grocery store at 8:00 AM on a Tuesday now. Cause I have to schlep a week's worth of groceries. I don't want to go to the grocery store after work when everyone else is there. So spontaneity just doesn't exist anymore.

Synchronicity and asynchronicity were key temporal themes. Digital publics took shape through a back and forth between synchronous and asynchronous modes. That's because networked digital technologies allow for both synchronous interactions (e.g., live chat, videoconferencing, voice over IP calls) and asynchronous ones (social media posts and comments, other forms of web publishing, web boards, persistent chat platforms and channels, email).

Although it is true that online technologies have typically been organized in both synchronous and asynchronous modes, shifting public spaces online during the pandemic made both modes much more apparent. And both modes structured daily life in new ways.

For the Pokémon place-based gaming group, for example, live gameplay previously happened asynchronously, with no built-in chat function or other real-time functionality. But during the pandemic, the group moved to Discord (a text and voice-chat service that integrates with many online games) to coordinate play, as a synchronous means to minimize gaps of time and changing conditions between players. For example, if a rare item became available, there was no way to flag that within the game in real-time. So players returned to Discord and used coded language to let others know. The time gap is crucial, since at any moment the item can disappear, which is why the quick shorthand language was essential to everyone winning.

For members of the Brooklyn running clubs, some found the synchronous possibilities of chat during live Zoom sessions to be disruptive; others appreciated interacting synchronously with speakers, rather than wait for Q&A sessions after. This experience of time isn't determined by the affordances of Zoom, but, rather, constructed through contested norms and practices among participants.

Brooklyn librarian: On Friday is art expression. Anything art. And we talk about it. And we do the arts and crafts on screen, if they want to participate, if they have the materials at home. Or they can do their own art project, while we do our own art project where we are. Or they can show us stuff that they've already done. The thing about the community is, they don't have to do it on that day. They can post their stuff anytime. And it will be seen by everybody in the group… Because it's a community. [As opposed to] Zoom where you're in, and then you're out. And there's no way to get back in.

Time was often experienced as elastic. Many people described a sense of the elongation of the present, triggered by the rupture when the lockdowns began. This distortion of time was linked to space and spatiality, as daily life often narrowed to being home, and interacting with others mainly through videoconferencing or other online activities.

Such feelings may not be unique to New York. But most New Yorkers live in small apartments, and depend on shared public space for exercising, socializing, and other aspects of daily living. Most also depend on public transit. Consequently, New Yorkers were especially likely to feel confined in small spaces, or to spend more time in their neighborhoods rather than in other parts of the city.

Just as indexical language often linked lost physical spaces to virtual ones, so too could language emphasize focusing only on being present.In the Manhattan yoga studio, the teacher foreclosed thinking about other times and places. She rarely referenced the "there" of the actual yoga studio, only generalized references to being copresent, e.g., if participants were "all together" they could pair up. Instead, she employed the language of "here" and "now" as she narrated yoga poses. Although classes met on a regular schedule, the teacher framed the virtual space as an immediate present, unmoored or insulated from actual-world space.

At the Queens LGBT center, events took place online according to schedule, but often ran over time. The drag game night, for example, was scheduled for 1.5 hours but often ran as long as 2.5. The participants noted how this reflected experiences of queer temporality as not conforming to heteronormative "straight time." Virtual spaces, in this sense, existed as places in their own right, with their own temporal dimensions.

Bronx business owner: It was a blur from March 28th to May 5th, Cinco de Mayo. That whole period was just a blur, just us adapting, restructuring, just trying to figure it out.

Timelines and phases were another key way people expressed pandemic temporality. Time and space seemed to lose meaning or become elastic during the pandemic, and even in virtual public spaces.

But, in other ways, the pandemic was experienced in a linear, staccato fashion, punctuated by specific moments. Many

white-collar offices and workplaces sent workers home in early March, while schools officially went remote in mid-March, during a last-minute Friday announcement from the Mayor. The official "New York State on PAUSE Executive Order was issued by Governor Cuomo on March 20, 2020. Initially, many stores and restaurants closed as well, as the crisis mounted and transmission was not well understood.

Places like the Staten Island LGBT Council shut down their programming in March and announced a "Virtual Front Desk" instead, moving all services to digital platforms "until further notice." The Brooklyn Public Library closed its doors on March 16, a few days after the governor declared a state of emergency. Slowly, the library began creating online offerings, starting with a Virtual Story Time in mid-March. Then, subsequently, the library offered virtual writing workshops, language exchange events, technology classes, a women's support group, music

performances, and so forth (yet postponing all art exhibitions until Spring 2021). The protest movement in response to the police killing of George Floyd in May, in Minnesota, gained steam through May and June, lending another temporal dimension to an otherwise surreal time.

Brooklyn runner: We had to adjust our expectations. At the very first social committee meeting that I had after NYC Pause went into effect, we were all still fairly optimistic. People said, "it's okay. This is all temporary. We'll be back to normal activity soon."

Manhattan yoga student: On paper, it is [a 40 hour workweek]. But in reality, it feels like it's all consuming... I'm on site twice a week, two days a week. So the other three days are online. So that should theoretically be 24 hours, but it seems like a lot more. And it is: I'm working overtime usually.
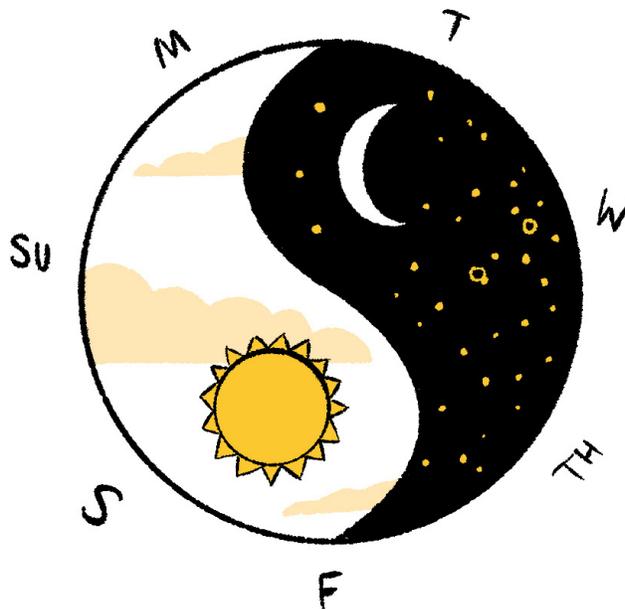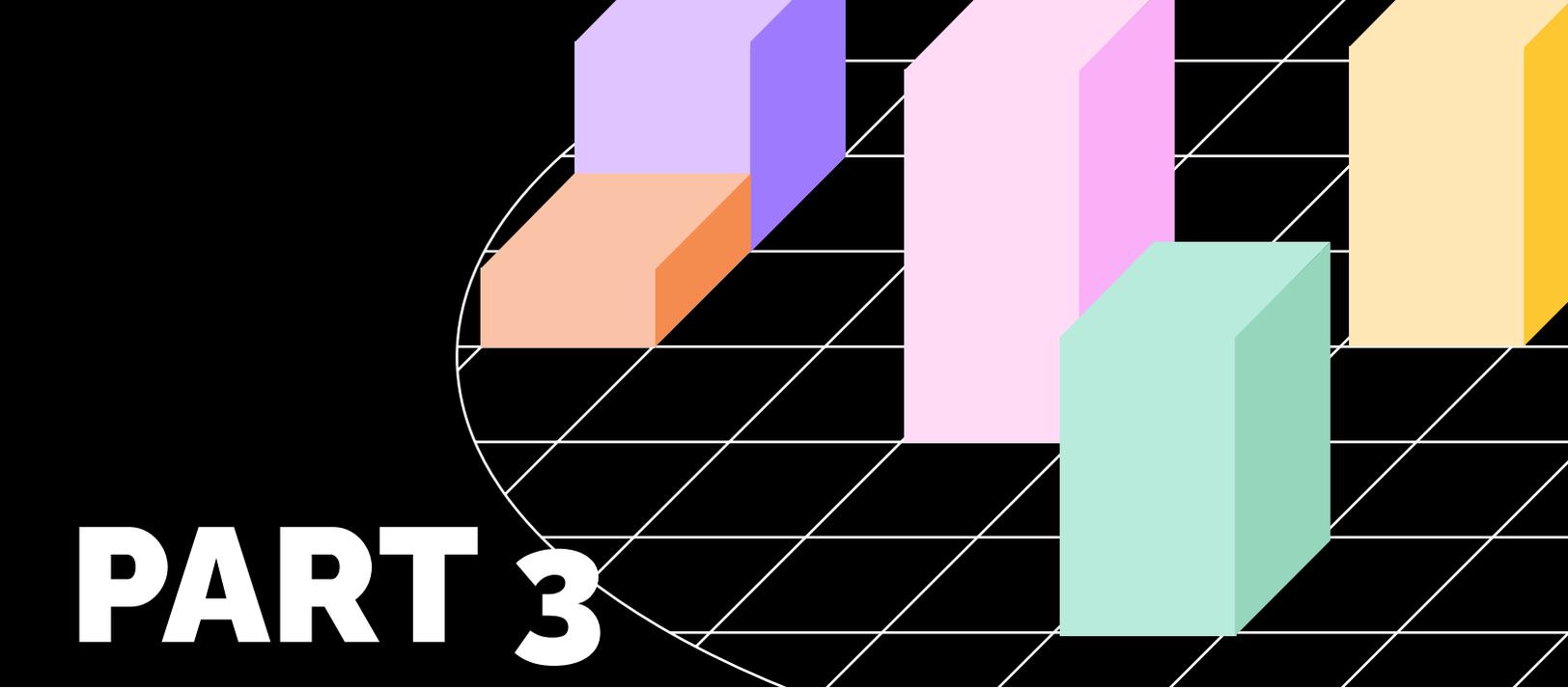
PART 3

THE LEARNINGS: *What should be done?*

In this last part, we explain what technologists, policymakers, urban designers and researchers can learn and take away from the *Terra Incognita NYC* project, and suggest a short list of demands that can be made by community advocates.

Learnings for
Technologists

1 **Technologists need to ensure that communities receive better maintenance regimes for their technological infrastructure. Increasingly, communities are dependent on technological infrastructure for organizing and participating in social life.** This dependence cuts across class, race, and age, but affects communities and individuals with different degrees of severeness. If technology is to be a tool for equity, and to mitigate this divide, these infrastructures need to be maintained rigorously, and reliably.

Technology companies must also develop more rapid responses for breakdowns, as well as a strategy for how this response will serve communities equally. For example, when the weather disrupts internet connectivity, no community should take priority over another.

Similarly, to support robust maintenance practices and literacies, communities need technology products to be built free of built-in obsolescence. This requires the right to repair, as well as the resourcing of local community-led support clusters that teach repair and maintenance.

2 **Home tech set-ups need to be designed for adaptability and a multitude of social uses.** Much of the technology people use in their homes—laptops, phones, cameras, screens—is not designed to allow engagement in the manifold social practices that have now moved online, everything from exercise to schooling and worship.

There also is a gaping chasm between the quality of technology set-up people can afford and use, and the skill they have to do so. While some may be able to afford a ring light, two screens, and a professional microphone, others are not, and/or don't have the skill to do so.

Technology can lower some barriers, but it can create others. Therefore, technology design should maximize adaptability and more decidedly allow users to tinker with technology. And it should do while guaranteeing a minimum standard in quality at an affordable price.

3 **Technology needs to enable the social practices of people from the bottom up.** Many of the technologies—both in terms of hardware and software—dictated certain ways of participating in the digital

social practices, rather than being driven by them. People tinkered with the technology to "make it work" for them (e.g. by using the chat function in Zoom in certain ways). Still, there is significant room for improvement in building technology that is more adaptable, particularly to the various ways in which it gets woven into people's social lives.

The disability community has, for decades, led scholarship and activism in this space, focusing the idea of people as designers and worldbuilders (see the Crip Techno-science Manifesto[15]). Technologists should build on this work, so as to develop methods for creating technology that centers on the *social* use of technology across all communities.

Technologists often don't acknowledge individuals and communities as worldbuilders; and they deploy a narrow view of what people do with technology, and how. Such a view is often grounded in abstract, rather than empirically grounded knowledges of social use. Moreover, they ignore the important social meaning of technology. Technologists should build on existing leadership in the disability community to change that.

4 There is a need for a more holistic framing of "safety," one that is community specific. Safety was an important concern that cut across all communities.

These notions of safety pushed well beyond "privacy." "Feeling safe" was a necessary condition for digital public spaces to emerge, and it often was specific to the community, not seldomly including moderation policies and curation practices. Technologists need

to embrace this complexity, and to engage directly with communities, so as to offer a mix of technologies and policies that help create a community-specific sense of safety.

5 There is a pressing need to engage more directly and deeply with communities and to recognize their curation and maintenance as labor. Technologies and, specifically, platforms, owe a lot of their success to the unpaid labor of community leaders, those who shepherd their communities' use of the technology. They possess domain expertise, which is needed to make these technologies more accessible and equitable.

Technologists should find more effective ways to engage with these experts and their knowledge. In order to make this engagement equitable, it is worth considering compensating community leaders for this labor.

15   "Crip Technoscience Manifesto", Catalyst, April 2019

Learnings for Policymakers

1 **Equitable infrastructure provision is the necessary precondition for thriving digital public space.** In order to create and participate in digital public space, communities need infrastructure provision, particularly with regards to broadband service.

Currently, NYC's geographies of inequity map onto the geographies of the infrastructure disparities that lie behind the "digital divide." And this picture aligns with the spatial distribution of poverty rates in the city. Policymakers must ensure that there is equal distribution and access to conduit and utility poles across all neighborhoods of the city.

Policymakers must also work to dismantle the monopolistic power of internet providers. In the U.S., only a few internet providers serve the majority of Americans with broadband access. Few Americans have a choice in picking their Internet service providers[16]. At the same time, there is little transparency about where cable companies provide what kind of service. The combination of power concentration and intransparency put communities at the mercy of private corporations.

2 **Tech company business models are detrimental to community wellbeing.** Communities labor in order to make technologies work for their practices. Tech companies, particularly those providing platforms, extract this free labor—alongside swaths of meta data on demographics, user behavior, and so on—in order to optimize for traffic and ad sales.

This extractive set-up is not in the interest of communities, and can lead to breakdowns in "safety" and "trust." For example, there may be traffic-generating content that does not violate the platform's notion of safety, but harms members of a particular community. (Business models vary from platform to platform, and not all platform's business models put communities at risk to the same degree.)

Policymakers must focus more attention on the link between business models, a platform's functionality, and community wellbeing. Based on that knowledge, they need to develop more fine-grained methods for regulating platform operators effectively.

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16   "Profiles of Monopolies", The Institute for Local Self-Reliance, August 2020
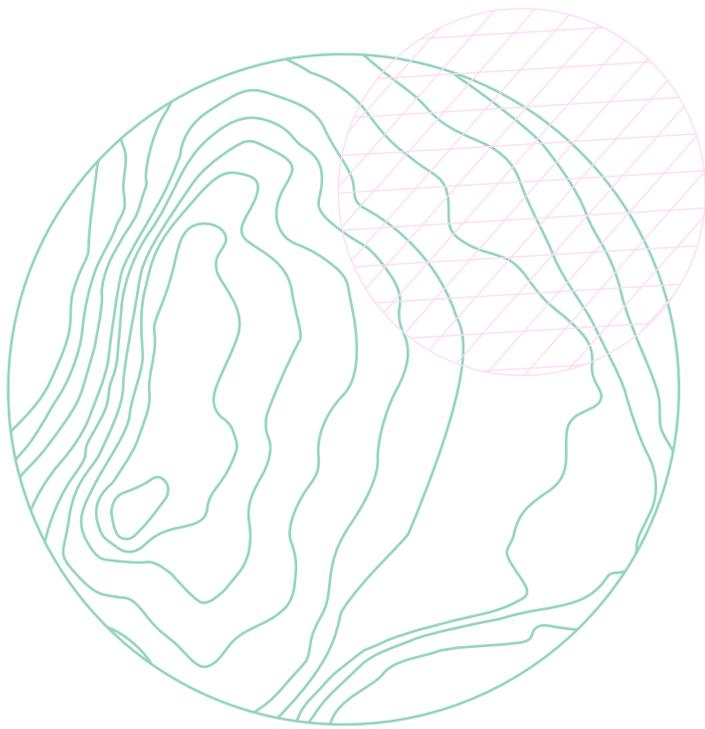
makers do not necessarily have the knowledge, skill and processes in place to understand how new technologies work, and how communities use them.

There is little socio-technical literacy that is community- and neighborhood-focused. This gap is often filled by private corporations. Whether it is the platform providers themselves or different consulting companies, corporations contribute to a growing gap between local policymakers and their constituents.

Policymakers urgently need to address this issue. And they need to develop partnerships with communities and researchers to develop methodologies and processes, so as to foster social-science engaged UX design and policymaking.

3 **There needs to be better citywide coordination between educators, care-providers, city administrators, and families.** The pandemic has been particularly difficult for families with members in need of care, and parents of young children. This sudden burden—homeschooling children, or supervising remote learning of children, or caretaking for sick or elder family members, all while maintaining a regular work schedules and responsibilities—has exhausted communities.

Technology, combined with focused coordination of resources through city officials, has the potential to alleviate that burden. But in order to make that work, there needs to be better city-wide coordination and interaction—between families, city officials and providers—about how technology can be a facilitator, and what policies are needed (e.g. family leave, or trainings for parents who become teachers).

4 **Policymakers need to develop literacy about technology, and about how communities use technology.** Local policy

5 **There is an urgent need for building up the space of public interest technology, as well as civic tech.** There needs to be more political interest in building up capacity for creating technologies that are in the public interest and serve the public good, particularly at a local level. This is needed in order to serve communities better with and through technology, and to engage with citizens more democratically and directly,

There also needs to be more decided investment into the development of civic tech, technologies that enhance the relationship between citizens and governments. Creating this public-focused digital infrastructure is a crucial step towards equitability, in both digital and physical spaces.

Learnings for Urban Designers

1 The pandemic has transformed the nature of local outdoor space. As most people were confined to their homes from March 2020, and stripped of social interaction outside of family, they turned to their local outdoors once the weather improved. Spending more time in local parks, on stoops, in front of blocks, or walking the neighborhood changed the dynamic and nature of local outdoor spaces, which previously were more transient.

In that sense, the rise of digital public space increased the need and demand for physical places for communities to get together safely. Urban designers must be aware of that dynamic and find ways to support the community-driven curation of small scale and hyperlocal outdoor spaces. This includes taking into account the existing racialized nature of outdoor spaces. It also requires adopting anti-racist urban design practices that, in particular, push back against the surveillance of toops, streets and doorways.

2 Urban designers need to frame publicness as a practice. Very often, "public space" is conceived of as an achievement of design and designers, not people and their practices. Yet communities forged a sense of publicness in their practices under conditions of isolation and social distance, and they did so based on private rather than public infrastructures. This indicates that publicness is not something designers build, but, instead, something people *do*.

Urban designers need to expand their own frame of public space to this notion of publicness as practice. Such a notion centers community goals over design ideas, and pushes beyond the standard notion of public space as "open and accessible to all peoples"[17] to focus on the quality of this openness and accessibility.

3 Community curation needs to become central to the design of urban spaces, whether they are physical or digital. Communities, and community leaders, are willing and capable of creating and curating the public spaces they need and want. They are designers in their own right.

The pandemic has once more underlined this dynamic, both in terms of digital and physical public space. Urban designers

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17   "Inclusion Through Access to Public Space", UNESCO

should make community-driven design more central to the design of urban public spaces, and, as such, integrate community representatives into the design process early on.

4 Public space is contested space, and urban design reinforces this dynamic.
"The public" is not flat, but an assembly of many different individuals and identities. There are always multiple publics, and public space is contested. Claims to urban public space tend to be made most force-fully by middle-class populations who build on white privilege.

Urban design, and the "order" it imposes, can reinforce this dynamic. Urban designers must embrace this dynamic. And they must acknowledge that there is nothing universal about how public space is being used by different constituents.

5 There is a need for revitalizing neighborhoods and local communi-ties.
The pandemic has created a new and stark focus on locality. This new locality is deeply connected to identity, and to local engagement within and across communities in neighborhoods.

This identity, and this engagement, connects digital and physical public space. In this process, community-specific needs for neighborhood improvement become ap-parent: while some communities may need more local playgrounds, others may need more access to public transport. Urban designers need to be attuned to the local nuance of these needs.

Learnings for Researchers

1 **Short-term ethnography can generate important insights.** But, to do so, it must be coordinated well.

Ethnography is a method of study that focuses on long term and in-depth engagement with the field and its actors. Conducting ethnography in a short time-frame, per definition, pushes the limits of the method.

However, it is possible to generate rich qualitative data and insight across a large field and in a short period of time, if coordinated well. Coordination means to assemble a team of qualified and experienced researchers who, ideally, already have connections to local communities. It also means developing fairly strict research and data collection protocols, and fostering intense exchange among them, in order to facilitate preliminary coding as data comes in.

2 **There is value to being local.** As this project was a digital ethnography, it was not always easy for researchers to gain access to the field. In a pre-pandemic world, they would be able to hang out in neighborhoods and communities in person. "The digital" added another barrier.
But still, their real-world location mattered greatly. Researchers found real value in being local to the communities they researched. Familiarity with, for example, local histories, organizations, communities, and vernaculars, made gaining access easier. It also made it easier to understand the nuanced links between digital and physical public spaces. Engaging in geographically focused short-term digital ethnography can greatly be facilitated by researchers simply "being local."

3 **Issues of keeping research participants safe are different for individuals than for institutions**. Research that is being conducted in a pandemic has to be particularly attuned to issues around safety. This notion of safety pertains to the threat of the virus. But it also pertains to concerns around privacy and confidentiality, particularly as "life went online."

Individuals and smaller communities needed a different approach to safety—and, indeed, developed a relationship of trust with researchers more quickly—than institutions. This is partially due to the fact that institutions do not yet have protocols for dealing with research requests and observation of their digital space. Researchers have to factor this into research planning.

4 **Capturing the emergent nature of digital public space in a pandemic is difficult.** Making an unprecedented lockdown the focus of a scientific investigation is a decision of enormous uncertainty.

Temporality played a significant role in the research, as it was always uncertain when and how the lockdown would be eased or lifted. The changing seasons also played a role in the way in people's use of public spaces.

Capturing this emergent nature of the field and the research is a challenge. And it can best be addressed by using reflection, storytelling and innovative methods of data visualization.

5 **There is significant potential for interdisciplinary work on digital public space in a pandemic.** This study produced rich qualitative insight into the ways in which the people of New York City engage in the creation of digital publicness in the COVID-19 pandemic.

There is a lot of potential in combining qualitative insight with quantitative data on the pandemic, for example, infection rates or death rates,. But so too with other demographic categories, such as income, occupation, ethnicity, and so on. This kind of interdisciplinary research can help build a much larger research agenda on inequity, the pandemic, and digital public space.
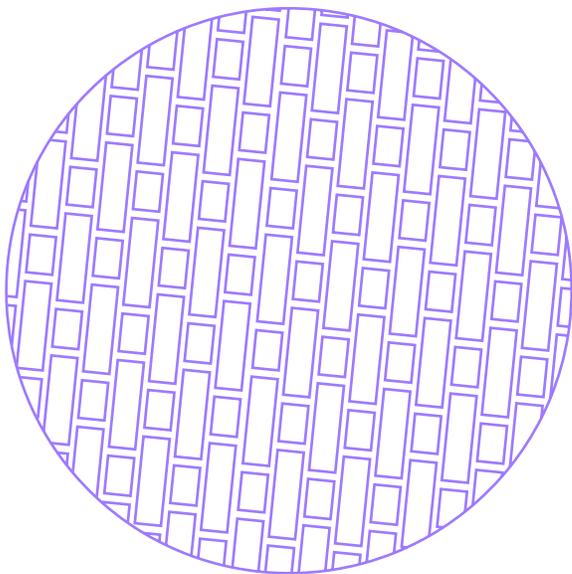
Learnings for Community Advocates

1 **Community building and solidarity are important for building digital public spaces.** Many of the digital public spaces that emerged during the pandemic emerged from a decided need for community building and forging solidarity. Both were recurring themes across all neighborhoods, and they functioned as a connector between people who may otherwise not have come together.

As we emerge from the pandemic, it may be important for local communities to strengthen community-building and solidarity across digital and physical public space. Doing so may be useful for communities working to revitalize their neighborhoods, and to mount pressure on local authorities to provide resources for infrastructure improvements and maintenance.

2 **Communities need to advocate for technology to support informal connections.** Fostering community building and solidarity relies much on informal connections. Yet forging these was more difficult in conditions of isolation; not least because technologies are not necessarily designed for forging informal connections. (That is not to say that existing technologies cannot help foster informal connections, they were just not created for that purpose.)

Communities could consider advocating for more ability to tinker with existing platforms and technologies, so that connecting locally and informally becomes easier (for example, to locally organize community childcare safely yet accessibly).

3 **There is potential in building peer-to-peer support networks that are focused on tech literacy.** As the city went into lockdown, community members found themselves in urgent need not just of technological infrastructure, but of tech literacy. Many communities are very savvy in their use of technology. Even so, plenty of people do not know how to use these different technologies in order to participate in practices and connect to their local communities and family members.

Local peer-to-peer networks have large potential for developing tech literacy. And they may be especially useful in developing the literacy that is needed across a community, so as to provide equitable access to digital public space.

4 **Communities could benefit from partnerships with both platforms and researchers.** As noted, policymakers could benefit from connecting with local communities and researchers, so as to understand how technology works for communities on the ground. Likewise, communities would benefit from a partnership with researchers and technology platforms.

Social researchers could help identify patterns and needs, and then connect them to wider societal issues or shifts. Social researchers could also mediate that information to technology companies, in order to foster more community-focused technology design (which would also include direct engagement with communities).

5 **Local community leaders could lobby policymakers to build long term partnerships, which are focused on building and maintaining equitable technology infrastructure and access.** During lockdown, communities forged new interest groups through their digital practices and participation in digital public space. As part of that, they built up new digital infrastructures, too.

Local community leaders could consider building on these new, self-built digital infrastructures. And to do so with the goal of developing a joint agenda, together with policymakers, for equitable technology infrastructure and maintenance.
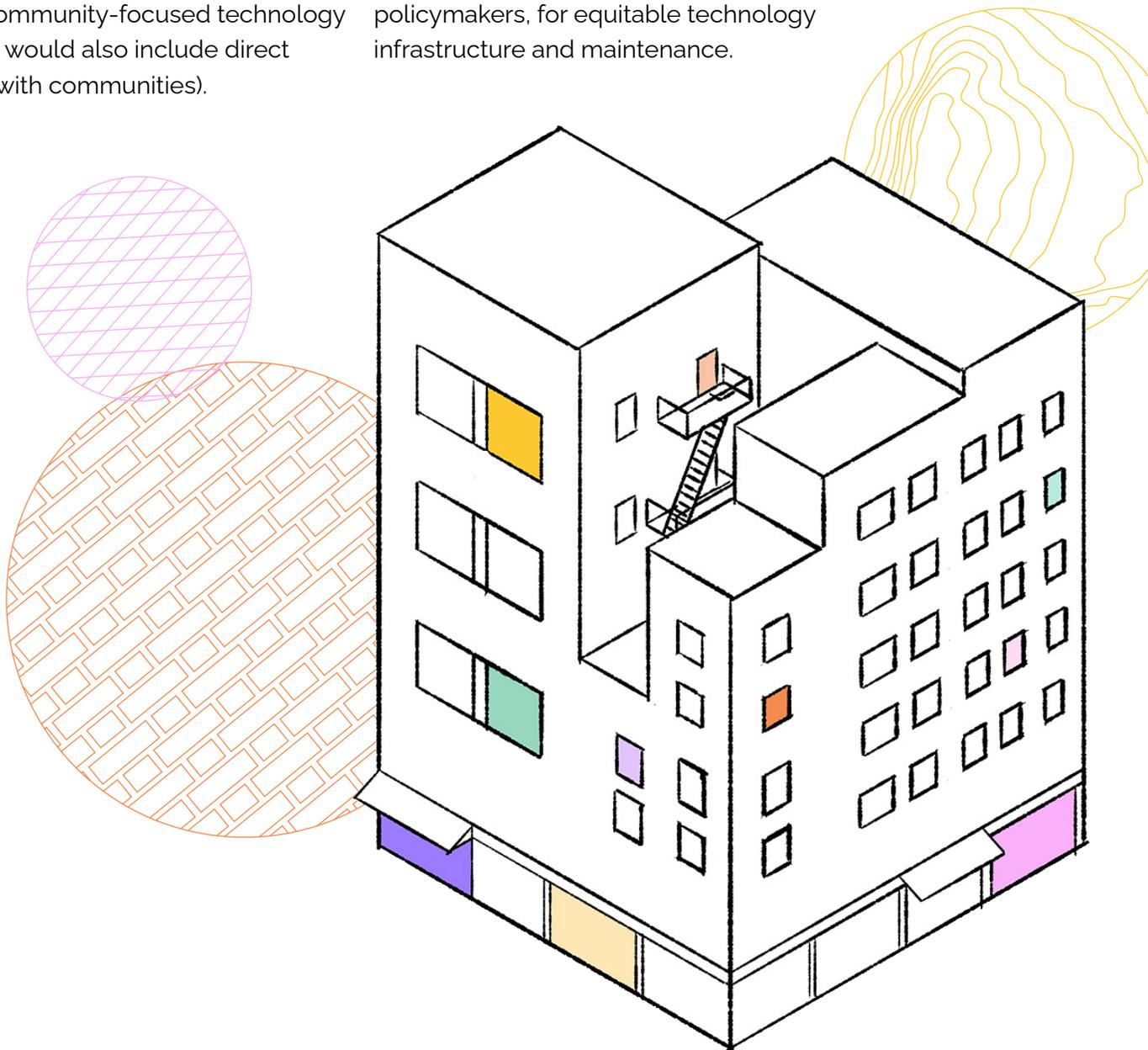
Team

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