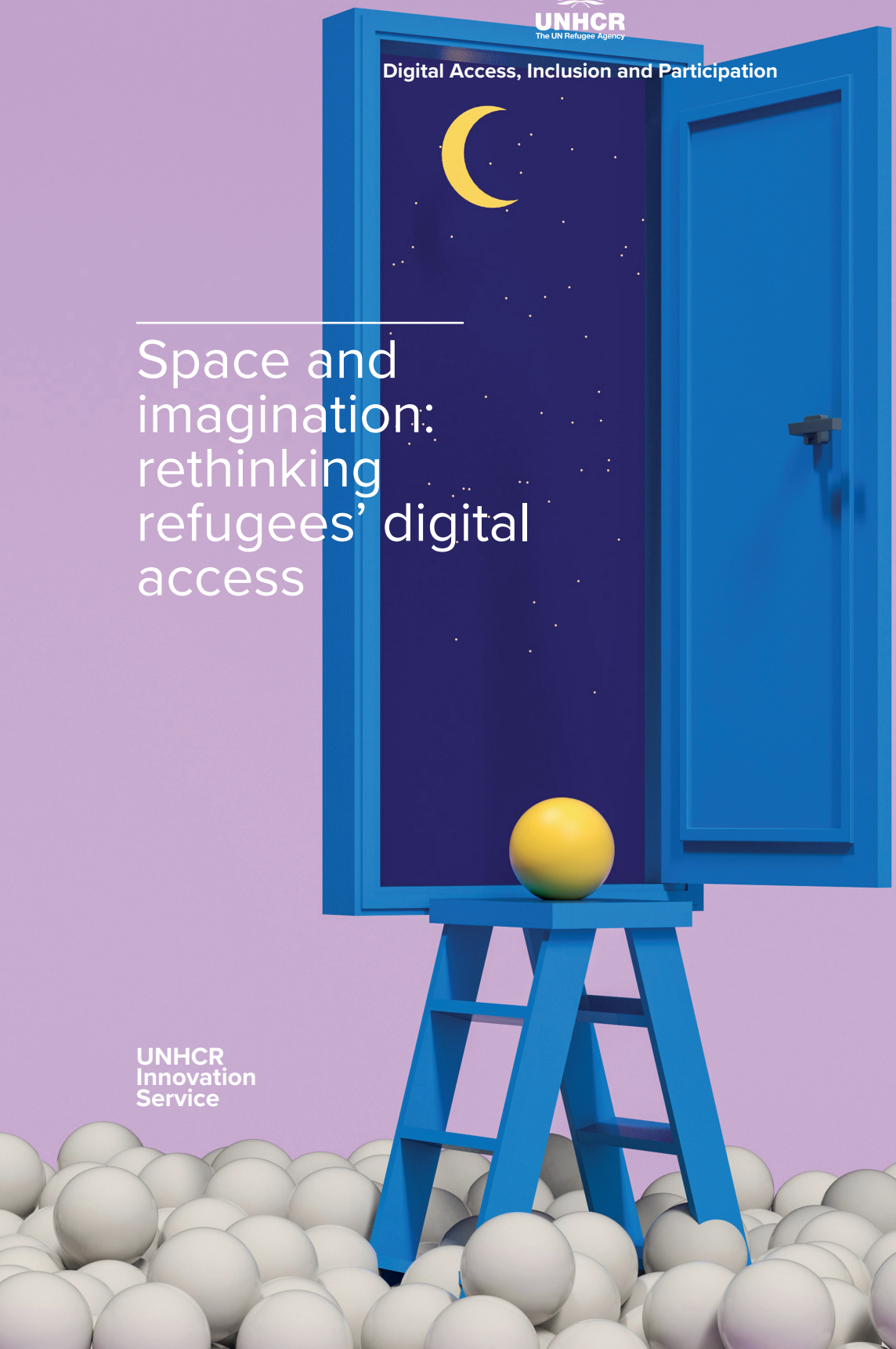
UNHCR
The UN Refugee Agency

Digital Access, Inclusion and Participation

Space and imagination: rethinking refugees' digital access



UNHCR
Innovation
Service

Space and imagination: rethinking refugees' digital access

UNHCR Innovation Service
Digita Access, Inclusion and Participation

Web edition April 2020
Cover art: Jungmin Ryu

Author: Dragana Kaurin
Fellow at Berkman Klein Center for Internet & Society,
Harvard University and Executive Director at Localization Lab

Made possible thanks to
the generous support of:

Digital Access, Inclusion and Participation

2019 Research briefs - an exploration

The initiative previously called Connectivity for Refugees and supported by Luxembourg is as of 2020 called 'Digital Access, Inclusion and Participation'. 'Connectivity for Refugees' exists as a work stream but will start to operate under the name Digital Access, Inclusion and Participation Programme. In this document we refer to the initiative as Connectivity for Refugees.

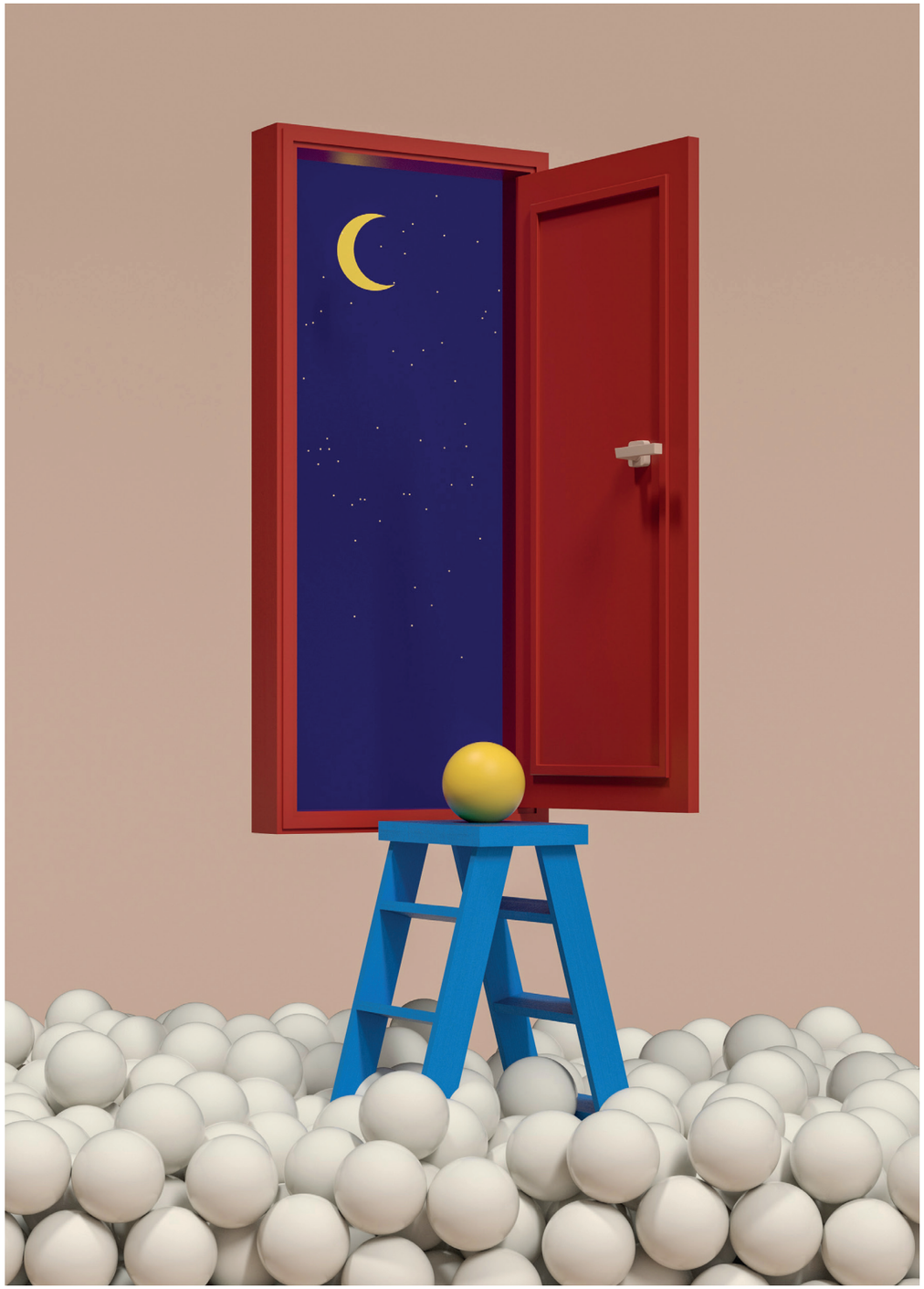
Through research and advocacy, capacity building, field experiments, and strategic partnerships, UNHCR's Digital Access, Inclusion and Participation programme works towards a future where all refugees, regardless of age, gender and diversity, have the right and the choice to access Internet connectivity. It seeks to ensure that refugees' voices are heard in humanitarian programming and that they can leverage connectivity to fully participate in the digital space. The Connectivity for Refugees initiative is part of this programme, and specifically focuses on barriers to digital access inclusion and works systematically across the aforementioned pillars

Research serves as a crucial precursor to bring insights into the complexity of digital connectivity, inform and challenge dominant views and narratives around access and inclusion of displaced persons in increasingly digital societies. The objective of Connectivity for Refugees' research stream is to provide a comprehensive outlook on connectivity, from different angles and different perspectives, to understand how connectivity intersects with other domains and fields.

This research is an exploration and aims to support future experimentation; bringing in topics that are on the margins so that UNHCR remains future-focused and at the forefront of developing trends in connectivity. Understanding how displaced communities find gateways to access the Internet, which factors influence and determine their choices, what UNHCR' s mandate of protection means in a digital space, or the extent to which specific technologies or tools can reduce or exacerbate inequalities, will inform and shape future efforts in providing connectivity to refugees in a safe, adapted, and dignified manner.

This publication is a part of a research brief series where UNHCR's Innovation Service has collaborated with a range of researchers to explore topics including Internet governance, digital transformation, diversity and inclusion. The briefs are all unique and reflect the author's style and individual voice.

Although the team has been extensively involved in shaping the themes and questions, and provided editorial advice, the views expressed in the publication are the views of each author. It is important to note that space was given to the authors intentionally to express their independent views and that these do not represent UNHCR. We welcome differing views and divergent perspectives and believe in the importance of challenging our own thinking, assumptions and ideas. Research offers us a platform to do this constructively and in a manner that is based on evidence and science, that ultimately helps us advance conversations on topics we identify as critical to a more just access and participation in the digital space.



Contents

List of Acronyms

APC	Association for Progressive Communication
GBV	Gender-Based Violence
GSMA	Global System for Mobile Communications Association
GSM	Global System for Mobile Communications
ICT	Information Communication Technologies
ICTD	Information and Communication Technologies for Development
MNO	Mobile Network Operators
M4D	Mobile for Development
NGO	Non Governmental Organization
SDG	Sustainable Development Goal
SGBV	Sexual and Gender-Based Violence
WASH	Water Sanitation and Hygiene

Introduction

In the past four years, a growing number of connectivity interventions have been developed to provide Internet access to refugees, financed by both public and private sector actors. These initiatives grew rapidly and without central coordination in response to the 2015 refugee crisis in Europe, using broadband, mobile connectivity, Wi-Fi, GSM, mesh networks, as well as satellites, drones, white space, and balloons. Lacking sustainable funding and a framework for these interventions lead many nonprofit organizations to turn to private sector actors for their resources, support, and funding, despite having very different values and interests in supporting this service for refugees.

As Internet connectivity interventions like UNHCR's Connectivity for Refugees and NetHope continue to develop and increasingly invest in programmatic research on usage and accessibility, there is still "a persistent gap between idealized visions of what digital connectivity could achieve (globally) and evidence about how new connectivities are used in specific contexts" (Smart et al., 2016). Reflecting on lessons learned over the past four years, many humanitarian practitioners and researchers are challenging assumptions underpinning mainstream connectivity discourses and questioning whether connectivity actually provides immediate gains as promised, if everyone who wants access to connectivity is benefitting from it, and how this affects existing social dynamics in refugee communities.

Refugees face many restrictions as they move through various spaces, fleeing persecution, violence, and atrocities, seeking safety and routes to transit through, and they are often confined to isolated spaces and a precarious existence once they arrive in host countries. Because of the ways in which physical spaces are imagined and designed, marginalized refugees, like women, youth, the elderly, gender and sexually diverse persons, and those with differing abilities and medical conditions experience even more mobility restrictions. This limits their access to coverage or signal strength and all the resources and benefits that come with Internet connectivity, contributing to larger power asymmetries in the community.

In contrast to the restrictions in mobility and access to physical spaces, the Internet and the digital realm are often framed as a borderless and egalitarian space, and therefore presented as an attractive and viable solution to various challenges refugees face. In practice, access to digital spaces has always been restricted by mobility and access to certain physical spaces. As long as connectivity is dependent on the varying quality and reliability of signal strength, access to charging points, network administrators, and mobile agents, it is unlikely to offer immediate benefits to users equally. Some refugees further experience restricted digital mobility because of lower digital literacy rates (especially among women, girls, and the elderly), and a general lack of online content in their native languages, limiting information and communication options.

When we envision and describe how Internet connectivity works, as was the case with the telephone and other communication technologies before it, a number of spatial metaphors are used. Simplistic spatial metaphors like "cyberspace", "information superhighway", "electronic frontier", and "the Global Village" do not merely serve as useful communications tools to explain digital workings through familiar terms, they also allow us to imagine interactions between people, both in-person and online (Graham, 2013). The way that practitioners' cultural bias and outlook affect the design of these interventions - their positionality - matters greatly in the context of connectivity interventions "because metaphors can guide our imagination about a new invention, they influence what it can be even before it exists" (Stefik, 1996, p. 16). Since interventions to bring Internet access to refugees are often created through a top-down approach, there is a need for questioning whose conception of and approach to connectivity is being used, and the impact their positionality has on the services designed for refugee communities.

One of the many concerns for approaching Internet connectivity as a solution that provides instant gains is that it proves to be a difficult assumption to be challenged: "if connectivity is universally beneficial then who could argue with attempts to extend it?" (Smart, Donner, and Graham, 2016). On the one hand, digital connectivity and access to technologies are portrayed as providing immediate and irrefutable benefits to refugees; improving health, providing access to education and information, and opening opportunities "to gain new skills or find work" (OCHA, 2017). On the other hand, the disruption and contradicting narratives generated by these interventions are minimized or ignored. While connectivity is a key objective in both the Sustainable Development Goals[1] and the Global Compact on Refugees[2], it is often described by humanitarian practitioners and in the media as a one-size-fits-all solution to a number of problems refugees face and a critical need-often claiming refugees prioritize Internet access over other needs like food and water through essentialist narratives (Maza, 2018).

This brief draws on narratives in connectivity interventions to identify distinct and disconnected imaginaries among actors, their effects on how connectivity is implemented, and the potential risks to further marginalize refugees on lines of gender, age, ability, status, and health, thereby reinforcing and/or exacerbating existing inequalities. It is important to identify and analyze how these disconnects are applied in practice, and used to justify harmful or ineffective connectivity interventions. Unpacking these perspectives offers an opportunity to explore how spatial imaginaries of practitioners and researchers in this field change "not just how we envision connectivity, but how we enact it" (Graham, Anderson and Mann, 2013, p. 32).

To study the spatial qualities of these connectivity discourses and interventions critically, this brief draws on frameworks from human geography, urban planning and design, and information sciences that allow us to analyze the work critically through "spatial imaginaries." In order to address the relationship between physical and digital spaces in refugee contexts, the paper uses examples from urban planning and design to show how mobility in urban infrastructure is rapidly changing because of information and communications technologies (ICTs), and how these disruptions can exacerbate existing social inequalities. Discourses from spatial studies are particularly important here because narratives about refugees are often framed around mobility, restricted movement, access, and physical isolation, while discourses about the Internet and ICTs are framed in entirely opposite terms:

> "Claims that ICTs can restructure and reconfigure what the very ground under our feet means, need to be taken seriously. Thus, understanding the spatial

1 https://sustainabledevelopment.un.org

2 https://www.unhcr.org/the-global-compact-on-refugees.html

> dimensions of these narratives about what technology can achieve is [a] crucial task. These spatial dimensions are as important for drones and balloons, as they are for the nascent “Internet of things”, for high bandwidth video, and for virtual reality augmented online experiences, since each reconfigures connections between actors.” (Smart, Donner, and Graham, 2016, p. 8)

This paper will begin by examining existing connectivity interventions through three different approaches (Smart et al., 2016), followed by an analysis of what fractured information flows look like in refugee communities (Lloyd, 2014; Lloyd, 2016). The second section will explore how physical mobility affects access to digital connectivity. The third and final section will consider how techno-colonialism affects technological interventions. This section concludes with lessons from other humanitarian services like water sanitation and hygiene (WASH) on how to address the needs of refugees through approaches that provide services equally and reduce negative and unintended consequences on vulnerable populations.

Spatial imagination is the process through which social groups work out the relation between social and physical phenomena, establishing links between physical attributes of people, objects, and other sensory attributes such as sound, smell, and the nonphysical dimensions of ideas, ideals, and innovation. (Chattopadhyay, 2014)

Positionality refers to the stance or positioning of practitioners or researchers in relation to the sociocultural and political context of the connectivity intervention.

Spatial imaginaries in connecting refugees

As an analytical tool used often in the field of science and technology, spatial imagination can be effective in identifying underlying positionality and power dynamics in connectivity interventions. Imagination is a major driver of innovation and design, and it enacts how concepts of time, space, and identity are understood by those developing new solutions and technologies. While ICTs are used by more than half the global population, the vast majority of these currently originate from more developed, Western countries, shaping the social and cultural dynamics of adoption and use.

Spatial imagination can be particularly helpful in situating our own stance individually and culturally in the context of refugees, and with regards to their abilities and needs, which is important for identifying structural and power asymmetries within refugee communities, and with aid agencies. These worldviews can be divided chronologically and by positionalities, showing a shift from narratives that are binary and utopian, toward more complex and nuanced discourses in connectivity interventions for refugees. The materials used in this brief only provide short quotes from stakeholders, and focus mainly on the underpinning assumptions and understandings of connectivity from practitioners’ perspectives, which is why only their imaginaries are analyzed in this paper.

Imagining connectivity interventions through a techno-optimist lens places ICT as a solution to

a number of different socioeconomic and sociocultural problems faced by refugees. The Global Village imaginary reconnects refugees with family, by bringing them to meet in this digital space, and envisions the lack of connectivity to be the only barrier to mobile banking, a barrier that is overcome when refugees are ‘allowed’ to enter a shared cyber marketspace. The Shrinking Distance imaginary - the notion that connectivity is removing distance between refugees and life-saving information, or access to services that can provide this information and support - is seen repeatedly in most refugee connectivity interventions and research baselines. In contrast, the third imaginary, Digital Augmentation is characterized by identifying information flows and existing power dynamics in communities through the lens of gender, age, ability, and status in the community, and questions how these factors will be affected by the intervention. It rejects the idea that a social problem can be solved with technology, and instead focuses on existing communication ecosystems and how certain information flows can be augmented.

Techno-optimism the belief that technology has consistently improved our lives for the better and is likely to do so in the future. In considering societal problems, the solution lies in technological innovation.

Technorealism is an approach that demands that we think critically about the role that tools and interfaces play in human evolution and everyday life. Integral to this perspective is our understanding that the current tide of technological transformation, while important and powerful, is actually a continuation of waves of change that have taken place throughout history.

Global Village imaginary

Seen through the Global Village imaginary, Internet connectivity establishes a shared, egalitarian, digital space where refugees can have immediate and equal benefits, and access to other connected actors. The term “global village” actually predates the Internet and describes the general phenomenon of an interconnected world as the result of the propagation of media and communications technologies and is a “dominant term for expressing a global coexistence altered by transnational commerce, migration, and culture” (Poll, 2012). It is the most simplistic imaginary of how connectivity works and what it offers, described as a connected/unconnected binary: individuals are either in or out of the Global Village. According to this imaginary, simply bringing refugees ‘into’ digital spaces or ‘online’ would be sufficient for reestablishing interpersonal connections that are viewed as having been weakened by physical distance. The following example illustrates this thinking:

> “When refugees are compelled to leave their homes and families are torn asunder, communities get broken, people get split (up), refugees try to stay connected with their families...The benefits to refugees are clear: Getting online is the only way to communicate with family left behind or gone ahead. It’s also one of the best ways for them to access trusted sources of information about the asylum process and its changing procedures.” (UNHCR, 2016)

Connectivity is not just a prerequisite for reuniting refugee families torn apart; here it acts more generally as an enabler, capable of providing refugees with other extraordinary benefits exclusively in this shared space. Private sector actors often describe how their services work through the Global Village imaginary:

> "Mark Zuckerberg, chief executive of Facebook, promoted access to the Internet as "an enabler of human rights" and a "force for peace" as he announced that his company would help the United Nations bring Internet connections to refugee camps. "It's not all altruism," Mr. Zuckerberg said, in an implicit acknowledgment that drawing new users to his service is also good for Facebook's bottom line. "We all benefit when we are more connected."' (Sengupta, 2015)

> "[Broadband for Refugees] reflects the increasing recognition that, in addition to emergency responses, the world's growing refugee population requires investments in long-term solutions and that, in today's connected world, a sound investment strategy should include initiatives that increase refugee access to broadband" (Levin et al., 2019)

Many of the materials that reflect this idealist imaginary are from 2015, when the refugee crisis in Europe was prominently covered in the media. This was also the time when a growing number of organizations started working on improving refugees' digital access, and when seemingly every single person or institution was working on an app, resulting in over 1,000 different apps to help refugees (Madianou, 2019).

This dichotomy of 'connected citizens of the Global Village utopia' versus the 'unconnected refugee' has permeated into public narratives. The online news platform Mashable used the term "digital refugees" to refer to people who were disconnected from the Internet during the Hurricane Sandy emergency, and had to commute to and from friends' houses to get online: "Some Mashable staffers without Wi-Fi walked dozens of blocks to work in the apartments of connected co-workers. And we've heard stories of this happening all over" (Smith, 2012). Similarly, the term "Internet cafe refugees" is used in Japan for people who lost their homes during the 2014 recession and started living in Internet cafes for affordable rent and to stay connected (Paul, 2015).

The Global Village imaginary is, however, quite simplistic both in its understanding of what connectivity alone offers and in its disregard for the complex economic, social, and cultural factors that mediate access to and use of the Internet:

> "Just giving someone time at a terminal with Internet capabilities – or, by extension, at a kiosk in a public place – will not benefit anyone who feels confronted with a seemingly insurmountable problem, or who has no idea where to begin… connection to the Internet does not inherently make a community, nor does it lead to any necessary exchanges of information, meaning and sense-making at all." (Graham, 2001, p. 295)

Shrinking Distance imaginary

The majority of intervention narratives describe connectivity through a Shrinking Distance imaginary lens, where connectivity reduces the gaps between refugees and vital information, education, paths to opportunity, and self-sustainability. Here, like in the Global Village imaginary, connectivity acts as an enabler, where interventions allow refugees to access these benefits and services:

> "…Mobile technology and mobile network operators (MNOs) have an important role to play in delivering dignified aid, while also providing a path to self-sufficiency for people affected by crisis, especially those facing protracted humanitarian crises. The M4H programme envisions a digital humanitarian future in which mobile and digital solutions play an optimisation role in providing improved access to services, information and choice for people who could be or already are affected by crisis." (Casswell, 2019, p. 6)

> "Putting appointment management and alerts and updates online could end the time-consuming practice of going around camp with a megaphone or asking refugees to queue for hours for nothing. Instead, they could schedule their own appointments, get notified about disease outbreaks, or send for medical help. When people eventually leave camps, information they find online can make them better informed and prepared." (UNHCR, 2016)

This last example also reveals how positionality orients technology and its benefits towards practitioners rather than intended beneficiaries. These accounts, which describe manipulations of space and time through the power of ICT, lack full consideration of the people at the receiving end of these information flows. The narratives do not focus on the social dynamics in communities, or explain who may benefit from the physical delivery of information by megaphone, versus who benefits from ICTs in this context. They also rarely address the experiences and needs of those refugees who do not have a phone, are not sufficiently digitally literate, or have visual impairments.

Imagining connectivity in this way can actually lead to the creation of new barriers, as one beneficiary describes in the example below, because practical barriers to the use of technology for service delivery were not considered. In this example, rather than eliminating imagined digital distance, the connectivity intervention creates a new kind of physical distance complicating service delivery. In order to have access to the same benefits through connectivity as everyone else, refugees with disabilities rely on their existing social connections to access services, by asking others to charge their phone at one of the stations:

> "We need a solar charger – then it is ok, but otherwise we have to send [our mobile phone] with someone. Then the battery may remain [at the charging station] for a long time because you have to find someone to pick it up" [Refugee with disabilities, Bidi Bidi settlement]" (Downer, 2019)

A common way to avoid these mistakes is to prioritize involving marginalized refugees in decision-making, through participatory design approaches. When community dynamics and power asymmetries are not considered in the design of connectivity interventions, they could make it harder for marginalized refugees to get information and communicate with others. This is not to say that connectivity is creating a disadvantage on its own; instead, connectivity can intensify existing information gaps for more marginalized refugees when it fails to provide displaced communities with opportunities to engage with ICTs in an equitable and sustainable manner, mindful of the other factors at play that can hinder access:

> "For many low-income people the social experience of life in marginalised places is one of being tightly confined by time and space barriers rather than being liberated from them. In such places 'the space of flows comes to a full stop. Time–space compression means time to spare and the space to go nowhere at all'" (Graham, 2001, p. 291)

Digital Augmentation imaginary

In contrast to the first two imaginaries that are rooted in techno-optimism, Digital Augmentation sees ICTs through a more critical lens, recognizing that technology is not a silver bullet solution, and "how [it is] embedded into existing networks, structures, and positionalities" (Graham, 2015). Some connectivity interventions shift to this imaginary over time, rethinking and challenging technology interventions that are designed top-down, and interventions that are supply-driven instead of needs-driven:

> "There is no miracle device that will solve all communication and information needs - it's lo-fi, working with more advanced technology, that is needed to come at the issue from all angles." (UNHCR Innovation Service, 2019)

> "I also think that there may be some ethical issues when a third party (us) designs a network to influence the social dynamics of a crisis affected population without the express consent and partnership of the agency who has primary authority of that facility." (Bharania, 2017)

This spatial lens understands how ICTs are embedded in specific contexts and therefore are "enacted through existing social relations," and that "new connectivities could work within existing relations to cause disadvantage" (Smart, Donner, and Graham, 2016). It recognizes intersectionality in connectivity, and how employing new systems in the information flows might affect digital and physical ecosystems, what it is replacing, and consequences of the intervention:

> "Another connected community centre: was that the one key opening all doors to the world of fulfilled digital promises? Online learning and better education, professional development, remote work opportunities, access to relevant content and valuable information, and the ultimate possibility to be and stay connected beyond all physical barriers and constraints...we also want to make sure that we don't just drop equipment in a camp and figure out six months down the line that the costs of running a centre on a generator are too high, that the population is digitally illiterate, or that the location is just not convenient and very few people have access to it." (Balestra, 2019)

This quote shows how discourses can evolve over time as this was UNHCR's Connectivity for Refugees narrative only three years prior: "This year, Connectivity for Refugees will continue to look for ways to enhance access to technology through connected community centres, where refugee and host community students and others can access educational materials, do research and gain computer literacy" (UNHCR, 2016). When Internet access for refugees is imagined as a binary, central, egalitarian space of connectivity, naturally we will create such physical spaces as a result. And because physical spaces are rarely egalitarian, as described above through limited mobility among marginalized refugees, access to the centers, and therefore to connectivity will also be limited.

Fractured information landscapes

In the absence of available imaginaries constructed and conceived of by refugees who are the stated 'beneficiaries' of this service and identify the impact of existing and dominant imaginaries on their access to connectivity, we must first understand the disruption in information flows resulting from displacement. Information landscapes can help us understand what broken information systems look like in situations of displacement, and understand the circumstances affecting the ways in which refugees are connected to, and influenced by, different sources of information and communication (Hannides, Bailey, and Kaoukji, 2016).

Defining information flows spatially, as fractured information landscapes, offers a unique way to identify challenges to connectivity adoption and "how information practice and seeking behaviours are enabled and/or constrained in the context of marginality, transition and resettlement". Understanding how displaced people's information landscapes are restructured in new environments allows us to understand the role connectivity plays, if any, and the potential outcomes and unintended consequences of technological interventions (Lloyd, 2017).

> An **information landscape** is an "intersubjective space that reflects the taken for granted and agreed modalities and sources of information that people who are engaged in collective enterprises and performances agree upon and legitimise. (Lloyd, 2017)

Put more simply, we have different ways of knowing information, both individually and collectively through normative cultural, political and economic contexts. For example, we rely on specific reference points like newspapers, community message boards, and evening news for specific kinds of information. We also physically go to certain places to seek out information like public libraries, museums, schools, or transit points for updated transportation schedules. We often rely on each other to explain certain things, both formally, like going to a lawyer or a medical specialist, or informally, like asking a younger cousin to explain to us what TikTok is. The Internet, with all its affordances, is just one part of our information landscape.

> “There’s always this narrative of technology coming in and connecting the unconnected and that’s just not how the world works. There’s always an existing mechanism for you to talk and communicate with the people that are important to you. For instance [in rural communities I work with] in Papua New Guinea...There’s a satellite phone or you could catch a bus. Those are the existing connectivities. There was never the no connectivity option.” (Smart, Donner, and Graham, 2017, p. 6)

Even in the best of circumstances, in societies with high literacy rates and narrow gender pay gaps, information flows are often unequal and limited. In situations of displacement this information gap is widened because of a lack of familiarity with the information landscape in transit and in host countries. Refugees must relearn ways of knowing, local customs to access points of information and attribute credibility and develop trust when faced with unfamiliar information landscapes. Misinformation makes this even more difficult, as well as the amount and quality of information available. Those who are forcibly displaced are suddenly left without “established social networks and ways of knowing that have built up over time”, and must restructure these information landscapes in the absence of or limited amount of context, and reestablish ways of knowing in unfamiliar societies.

> A study of refugees’ health information provides an example of disruption where people were required to reorient towards their new environments by identifying and connecting with affordances that would: fill in information gaps; adjust and modify their established ways of seeking information and ways of knowing to accommodate the disruption; and, then reframe and reconstruct new information environments to accommodate new content and competency knowledge within their new environments (Lloyd, 2014).

Both practitioners and researchers must approach connectivity work by being mindful of their own positionality, assumptions, and how their expectations and conceptions of connectivity and information may vary from the spatial imaginaries of displaced persons or other marginalized communities. This means being reflective and “constantly aware of what information and knowledge are important to refugees,” and how this might differ from our own ontological and epistemological view of the world. In this regard, what we consider to be knowledge “may need to be reconciled with our participants’ understanding” (Lloyd, 2016). Finally, it’s important to be mindful of unintended consequences of restructuring information landscapes exclusively through technical solutions that will cause more problems for refugees if Wi-Fi or mobile networks are suddenly out of service.

Can connectivity reinforce social inequalities?

ICTs, like all telecommunications, are powerful social catalysts that can produce many benefits to users. However, they also have the ability and potential to reproduce and reinforce existing inequalities related to the restricted mobility of women and girls, youth, the elderly, as well as those with different abilities and certain health conditions. Perhaps the most obvious way that connectivity interventions can exacerbate existing power asymmetries is through known affordances like access

to information, education, and work opportunities - albeit only for a select group of refugees. When there is unequal access to Internet-capable devices or Wi-Fi access points, a bigger rift can grow between those who can access and benefit from these services easily, and those marginalized populations who cannot.

Most of the research available on connectivity in refugee communities points to economic status, gender identity, disability, and age as factors affecting both access to and ownership of Internet-capable devices. These factors contribute to uneven access to connectivity, and positions device holders as information brokers. For example, one study showed that refugees in transit who were digitally connected to refugees who had already completed the journey, were less vulnerable to exploitation and abuse because they were able to acquire information about who to trust and how to navigate the journey. Those who were not well connected in this way were more likely to trust smugglers (Hannides, Bailey, and Kaoukji, 2016).

Lack of privacy as a result of having to share devices also affects the quality of access because users who do not have access to a private connection or browsing, may not be willing, comfortable or able to access information and may limit their own activities online:

> “An individual’s independence for mobile phone access is a critical variable for humanitarian interventions. For example, a mobile app designed to provide sensitive information about women’s health or safety will likely fall short of the desired goal if women have to use the app on a phone borrowed from heads of household, who are predominantly men. (Poole, 2018, p. 4)

Secondly, practitioners and researchers reliance on mobile phones to disseminate information and to assess unmet needs through quick surveys with beneficiaries may present new challenges to inclusivity (UNICEF, 2018; UNICEF, 2019). If mobile devices are held overwhelmingly by men who can read and write easily, do not have a visual impairment or physical disability, who speak English or another dominant language, are digitally literate, and comfortable using ICTs, then responses to these surveys will not be representative of members of the whole community, who may lack these characteristics or skills. What about people who cannot access these surveys on a mobile phone, or who have to share a phone with others and lack privacy to respond in a way that honestly represents their needs?

> “This is an opportunity that humanitarian organisations should spend time and resources embracing, particularly since digital ecosystems do not mature equitably, as demonstrated by the significant mobile gender and disability gaps. Without concerted efforts to promote digital inclusion, existing inequalities in refugee populations may be exacerbated and deny the most vulnerable the life-enhancing opportunities of mobile [technologies].” (Casswell, 2019, p. 79).

Lastly, one of the dangers of looking to technology as a solution to socio-political problems is that it undermines the social underpinnings causing inequality in communities. In the case of connectivity services for refugees this takes the form of assuming that the entire information landscape for refugees is rooted in Internet access. It ignores different kinds and sources of information refugees

use, and how much credibility is afforded to each of them. By solving the problems of information access through the techno-optimist imaginaries of connectivity, shrinking distances to information or bridging spaces for communication, connectivity is framed as a solution to complex social problems and inequalities.

Physical spaces

Geography and the construction and conceptualization of physical spaces in refugee settings can shape access to connectivity for those with limited or constrained physical abilities. The techno-optimistic perception of Internet connectivity and the promise of transcending physical spaces is often not realized for users who rely on Wi-Fi or weak cell signal, or those who use desktop computers in a community centre rather than laptops. Limited connectivity also affects refugees whose sociocultural circumstances restrict their movement, leaving them unable to physically move to a location where Wi-Fi or a mobile operator's signal is strong or reliable enough.

Location of network access points, charging stations, and even the network administration often contributes to informational gaps experienced by people marginalized as a result of differing abilities, age, gender and sexual diversity, making it more difficult to stay connected when access points are placed in locations that are inaccessible to those most vulnerable (Bidwell and Jensen, 2019). For example, proximity to connectivity through Wi-Fi may also affect those refugees living with HIV or infectious diseases whose mobility is further restricted due to stigma and physical abilities. The location of Internet access points and mobile signals is not just a matter of distance, but also one of topography. For example, elderly individuals may experience difficulties walking uphill or on uneven terrain to get better signal strength, and may seek out different routes to avoid hills, barriers and obstacles (Bidwell and Jensen, 2019). Involving marginalized refugees in the design process of these interventions, allowing them to identify and address these barriers directly could make connectivity more inclusive and accessible.

> "In the refugee camps in Europe, it is not uncommon for there to be gender segregation. Women and children in one part of the camp, men in another. Unaccompanied children or other especially vulnerable people in still another part of the camp where they can have greater security. In many of these communities, there is a great disparity between men and women when it comes to smartphone access. For example, in one crisis we are looking at, the ratio is 8 men with phones to every 1 woman who has a phone. So as a network engineer in a refugee camp, if you decide to merely put connectivity into the most obvious places where you see people congregate, you will most likely connect the men disproportionately, because as one researcher recently told me, **'Public spaces are male.'**" (Bharania, 2017, emphasis added)

The gendered nature of physical spaces is often overlooked when addressing barriers to connectivity. According to a global study on community networks by the Association for Progressive Communications (APC): "girls will sit on the veranda of the house or the courtyard of the house, which usually means they had access to a poorer signal...when asked whether there was a place for an access point that would suit women, they said there was no special point, as they are discouraged from moving far from home" (Bidwell and Jensen, 2019, p. 155).

Some refugee camps have a relatively higher group of individuals with disabilities, like Za'atari camp in Jordan, where nearly a quarter of refugees reported living with a disability (Asai, 2018). The restricted mobility of these individuals must also be intentionally addressed as a barrier to all forms of connectivity and access to information. In addition to proximity to routers and signal strength, refugees with disabilities are more likely to experience difficulty charging their devices, since they are less likely to have some form of energy in their home, compared to those without a disability. While there are often charging stations available in the camps, refugees with disabilities may need to rely on others to carry their devices to these charging stations (Downer, 2019). When experiences of marginalized beneficiaries aren't part of the design of deployed connectivity interventions, the result is a "poverty of connections", where individuals have to work harder so as not to be disadvantaged by the same system that others in the community benefit from:

> "Such a 'poverty of connections' limits a person or group's ability to extend their influence in time and space, often condemning them to local, place-based ties and relationships. It prevents them from connecting socially and technologically with the premium networked spaces... it adds major transactional and logistical burdens to the basic tasks of daily life... and it works against sustaining relations with the people and institutions that may help them to access services, markets, knowledge, skills, resources and employment opportunities." (Graham, 2001, p. 292)

Digital spaces

Restrictions in physical mobility for refugees affect not only their access to connectivity, but also how they navigate through digital spaces, by recreating and amplifying existing power dynamics within the community and with external actors. Their fractured information landscapes are then shaped by a lack of available content, restricted access to connectivity, digital exclusion, and even issues like digital illiteracy, all of which disproportionately affect marginalized populations, including refugees.

> "In US cities, suggests Boyer, 'marginal [people] are left outside the protected zone of the shopping mall, the campus, the walled community' whilst also being excluded from 'the Internet and the credit card/ATM system...It is these outsiders that haunt and invade the interior'" (Graham, 2001, p. 290)

When accessing Wi-Fi networks in refugee camps, the user experience itself leads to restricted digital movement. In some of the locations where NetHope works in Europe, users first see a landing page with curated information for refugees. This landing page does not include information about how refugees' data is processed, and not knowing who this data is shared with may affect user behavior and mobility online. Network engineers also sometimes block access to certain websites in refugee or displacement camps, in response to requests from local governments (Nianias, 2018). Much like the Free Basics program from Facebook, which promised 'free' Internet to the developing world, some of the services in practice offer only curated content and do not provide transparency to users about how their data is processed and protected (Madianou, 2019).

Most digital content is only available in a handful of dominant languages, which may restrict access to information for refugees who speak other languages. There are simply far fewer places to go online for speakers of minority and endangered languages, save for a few websites like Refugees.info, and apps like RefAid that were designed specifically for refugees and translated into languages representative of the refugee populations they serve. When restructuring refugees' information landscapes in these new environments, language is not the only factor that impacts the accessibility of information, but also context, design, and familiarity, which may be missing from affordances of connectivity. However, most digital spaces often lack color or any meaningful design that would keep one's interest on the page.

Illiteracy and digital illiteracy also create barriers to connectivity, and disproportionately affect refugees living with disabilities, as well as the elderly. Focus group participants for one GSMA study reported difficulty using the Internet on mobile devices and knowing how to download and access content. Many elderly participants explained how their inability to use these devices was due to literacy issues:

> "We do not use SMS because we cannot read and write. Even when calling, a child has to show us how to find the number" (Casswell, 2019, p. 29).

Learning from ICTs and the WASH sector

To address the issues of positionality and social inequality in Internet connectivity interventions for refugees, we can look at the lessons learned from other ICT interventions, and how older humanitarian services for refugees have incorporated inclusive design to provide more equitable access.

Before the Internet age, the telephone was the communication tool at the center of information flows and one considered to be the "entry point to information society". As more businesses and services turned to call centers for customer operations, they closed physical offices that many lower income customers without a phone relied on. Eventually, being "unphoned" came to also mean "unbanked" for many people in the UK and North America, disproportionately affecting communities along economic, gender, and racial lines, and slowly created a bigger rift in access to the information flows (Graham, 2001, p. 293).

Much like the "community centers" set up for Internet use in refugee camps, public phone booths were intended to be the physical spaces one can go to access this service. While the phone booths became a critical resource for those without home access to a telephone, telecom companies saw more engagement and bigger profit when placing them in high-traffic commercially attractive spaces like shopping malls and airports. This in turn led to a slow deterioration of public phone services in marginalized spaces where they are needed the most, causing deeper rifts in equality and access. Those working in providing access to telecom in marginalized communities learned that connectivity on its own "doesn't lead to any necessary exchanges of information, meaning and sense-making at all" but rather it must be understood to be a part of a larger framework (Graham, 2001, p. 295).

> "As the Internet starts to parallel the phone as an increasingly pervasive urban medium, the prospects of enrolling marginalised people and places into 'cyberspace' remain severely problematic. The key concern here is the polarising logic with which the global and disembedded medium of the Internet relates to the cultures, civil societies and landscapes of local spaces, cities and regions. This relationship tends to be one of extending the power of the powerful whilst further marginalising the less powerful within the same geographical spaces – a logic of intense polarisation." (Graham, 2001, p. 294)

The WASH sector serves as a great comparison because, like connectivity, access to these services are closely tied to physical space and mobility. WASH practitioners have also faced similar challenges in service distribution, bringing equitable access to WASH services for beneficiaries. Unequal access issues tend to be addressed separately by practitioners of WASH and other services, rather than addressed in an "integrated manner" (UNICEF, 2017).

It has taken the WASH sector decades to establish good practices like bringing experts on gender and disability in field operations, and working towards a rights-based approach. After adopting inclusive, universal and "equitable" access to water, sanitation and hygiene in alignment with Goal 6 of the Sustainable Development Goals, the WASH sector has approached accessibility through the lens of inclusion. This lens requires practitioners to "work with the community in all its diversity, and understand and challenge [inequitable or exclusionary] power dynamics" as well as negative stereotypes and perceptions of the capacities and agency of women and people with disabilities. In the figure below, UNICEF outlines how in rights-based WASH practices, gender and disability norms are key for developing services that reach everyone through universal design.

Universal design is an approach in the design of buildings, products or environments to make them accessible to all people, regardless of age, disability or other factors.

To ensure services work for everyone, WASH practitioners incorporate Universal Design principles[3] to make access easier for those with differing physical abilities, and limited mobility due to stigma or threat of sexual and gender-based violence (SGBV). WASH cluster partners also use participatory approaches in surveys, awareness-raising, educational tools, and program design.

3 http://universaldesign.ie/What-is-Universal-Design/The-7-Principles/

Human Rights Concepts		
Definition	Links to (and between) gender equality and disability inclusion	Understanding and applying the concept to WASH
Accessibility Equal access to the physical environment, transportation, information and communication and other facilities and services open or provided to the public. Accessibility is both a principle and the subject of article 9 of the Convention on the Rights of Persons with Disabilities A criteria for the human rights to water and sanitation.	Accessible WASH requires equal access for people with disabilities to WASH infrastructure and information/communication. Accessibility of WASH can lighten the burden for women in their socially-prescribed gender roles by easing daily household work and the work of caring for children, older people and people with disabilities. Such improvements can also potentially facilitate more sharing of these responsibilities by men, and contribute to gender equality.	To achieve accessible infrastructure, universal design can be used. Universal design is the design of products, environment, programmes and services to be usable by all people to the greatest extent possible without adaptive or specialised design. This can improve useability and access for sick and injured people, frail older people, children, and heavily pregnant women. Example: Accessible latrines designed by a person with a physical impairment themselves can lead to them using a latrine with independence and dignity, easing care work by others, and also potentially making the latrine more easy to use by children, older people or people who are sick. Communication can be made accessible by: using simple language; using interpreters for all languages, including sign language; and/ or supplementing verbal communication with visual information like pictures/charts. Example: behaviour change materials can be provided through visual and auditory media, and simple language and pictures can be used so that no-one 'misses the message' to achieve open defecation free status. This will ensure people with disabilities are included, whilst also reinforcing the messaging for the whole community. Given women are more likely to speak a local rather than a dominant language, and to have lower literacy skills than men, inclusive communications methods can also significantly enhance the opportunities for women's meaningful participation.

(WaterAid, 2017)

Technocolonialism in connectivity interventions

Returning to the initial question of "who gets to make decisions about connectivity?" with this context in mind can help us identify why there is a disconnect in these imaginaries. As a main driver of hardware and software innovation, and even a funder and facilitator of connectivity interventions, the private sector influences and shapes connectivity interventions. And though the actors managing the tech and innovation programs for refugees are mainly nonprofit, public sector organizations, it is perhaps even easier to narrow down who gets to make the least amount of decisions about connectivity- the refugees, as beneficiaries of this service.

This power imbalance between public and private sector actors, and beneficiaries, is reflected in the ways in which dominant imaginaries are conceptualized. When powerful private sector actors commit to connectivity initiatives for beneficiaries in the developing world - such as Facebook's Free Basics program - beneficiaries may not be able to access the service out of concerns about what a large corporation, such as Facebook, whose main concern is the bottom line, would do with their data. As Mark Zuckerberg stated, "It's not just about altruism" (Sengupta, 2015). Similarly, in cases of public-private partnerships where refugees rely on organizations for aid and services, they may have to give up their data because they have no meaningful choice (Kaurin, 2019).

Technocolonialism is a theoretical concept that critically examines the role of digital innovation and data in humanitarian practice through a colonial lens, deeming digital exploitation practices like data mining in guise of aid to be a new form of extractivism.

The oversimplification of connectivity, as conceptualized through dominant imaginaries exists not only in public-private partnerships, but also between partner organizations, as they envision and enact connectivity interventions differently. An important part of reimagining how connectivity can be offered as a service is understanding how we are enacting our own solutions to repair the fractured information landscapes of others, instead of providing tools and removing the barriers to enable refugees to engage instructure their own information landscapes. People must be able to adopt technologies on their own terms, using their own social constructs and imaginaries. More research on knowledge flows in forced displacement is needed in order to design inclusive, accessible and meaningful connectivity. To design these interventions we first need a blueprint of how forcibly displaced people get information, where in that ecosystem Internet connectivity comes in, and what it is replacing.

Conclusion

Dominant imaginaries of connectivity are telling of a greater disconnect among actors working on connectivity for refugees and the needs and agency of refugees and displaced persons more broadly. This disconnect is causing a deeper imbalance of power and further marginalizing an already marginalized group of people. Technology cannot solve or create problems on its own; rather technology works through existing modalities. Connectivity interventions cannot work without making spaces for marginalized refugees to be engaged in decision-making processes for connectivity services. It is important for connectivity interventions to be shaped and informed by refugees needs, values, experiences, perspectives, and opinions.

When we approach connectivity as a positively disruptive intervention and expect direct and immediate benefits from it, we ignore our own positionality and biases in imagining how connectivity should work for vulnerable populations, including refugees. This in turn leaves us with very little space for a meaningful and critical dialogue about who these interventions are designed to work for, who does and does not benefit from this conception and configuration of connectivity and innovation, and who may be disadvantaged by it.

All three imaginaries - Global Village, Shrinking Distance, and Digital Augmentation - reflect how practitioners envision the challenges and opportunities through connectivity, and perspectives from refugees themselves, as the intended users and beneficiaries of this service. Understanding refugees' spatial imaginaries and their information landscapes requires ethnographic research that is informed by and focused on the experiences of marginalized refugees in various communities. Perhaps the most critical information needed is not just how women, people living with disabilities, the elderly, and others with limited mobility find ways to go online - but rather how they access different kinds of information in the absence of Internet access.

While this paper examines the positionality of practitioners in connectivity interventions and its impact on refugees, we also need research to understand how practitioners imagine migration and refugees, their abilities, values, needs, and expectations, and ask how this affects services to beneficiaries and their inclusion and engagement in the planning of these interventions. Involving refugees, especially marginalized refugees in the design and decision-making processes in connectivity interventions is key in preventing harm and the reinforcement of pre-existing inequalities.

References

Appadurai, A. (1996). Modernity at Large: Cultural Dimensions of Globalization. Minneapolis: University of Minnesota Press.

Asai, Y. et al. (2018). Removing Barriers—The path towards inclusive access: Disability Assessment among Syrian Refugees in Jordan and Lebanon—Jordan Report, July 2018; Humanity & Inclusion; iMMA: Jordan, 2018. Retrieved from: https://reliefweb.int/sites/reliefweb.int/files/resources/67818.pdf

Badger, E. (2013, February 6). How the Internet Reinforces Inequality in the Real World. Retrieved September 19, 2019, from City Lab: https://www.citylab.com/life/2013/02/how-internet-reinforces-inequality-real-world/4602/

Balestra, G. (2019, May 17). When innovation is yet another Connected Community Centre: Connectivity at the margins of innovation. Retrieved from UNHCR Innovation Service Medium: https://medium.com/unhcr-innovation-service/when-innovation-is-yet-another-connected-community-centre-connectivity-at-the-margins-6bcb4227fc54

Bharania, R. (2017, March 29). On Emergencies, Wifi, Gender and Social Dynamics. Retrieved November 2, 2019, from The Digital Responder: https://thedigitalresponder.wordpress.com/2017/03/29/on-emergencies-wifi-gender-and-social-dynamics/

Bidwell, N. J.; Jensen, M. (2019). Bottom-up connectivity strategies: Community-led small-scale telecommunication infrastructure networks in the global South. Retrieved from Association for Progressive Communications: https://www.apc.org/sites/default/files/bottom-up-connectivity-strategies_0.pdf

Casswell, J. (2019). The digital lives of refugees: How displaced populations use mobile phones and what gets in the way. Retrieved from GSMA: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/07/The-Digital-Lives-of-Refugees.pdf

Chattopadhyay, S. (2014, January 1). Architectural History and Spatial Imagination. Perspectives on History, American Historical Association.

Downer, M. (2019, September 25). Bridging the mobile disability gap in refugee settings. Retrieved from GSMA: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/09/M4H_DisabilityGap.pdf

Graham, M. (2013). Geography / Internet: Ethereal Alternate Dimensions of Cyberspace or Grounded Augmented Realities? The Geographic Journal.

Graham, M., Andersen, C. and Mann, L. (2014). Geographical imagination and technological connectivity in East Africa Transactions of the Institute of British Geographers.

Graham, M. (2015). Contradictory connectivity: spatial imaginaries and technomediated positionalities in Kenya's outsourcing sector. Environment and Planning A. 47, 867–883.

Hannides. T., Bailey. N., and Kaoukji. D. (2016). Voices of refugees: Information and communication needs of refugees in Greece and Germany. Retrieved from BBC Media Action: http://downloads.bbc.co.uk/mediaaction/pdf/research/voices-of-refugees-research-report.pdf

Kaurin, D. (2019). "Data Protection and Digital Agency for Refugees". World Refugee Council Research Paper No. 12. Retrieved from: https://issuu.com/cigi/docs/wrc_research_paper_no.12

Levin, B. et al. (2019). Global Broadband Plan for Refuge Inclusion: Winter 2019. Broadband 4 Refugees.

Lloyd, A. (2014). "Building information resilience: how do resettling refugees connect with health information in regional landscapes – implications for health literacy", Australian Academic & Research Libraries, Vol. 45 No. 1, pp. 48-66.

Lloyd, A. (2017)." Researching fractured (information) landscapes Implications for library and information science researchers undertaking research with refugees and forced migration studies ", Journal of Documentation, Vol. 73 Iss 1 pp. 35 - 47.

Madianou, M. (2019). "Technocolonialism: Digital Innovation and Data Practices in the Humanitarian Response to Refugee Crises". Social Media and Society 5 (3).

Maza, C. (2018, January 25). Refugees want Wi-Fi More Than Food or Water, Says Turkish CEO. Newsweek.

Nianias, H. (2018, October 22). Homemade Wi-Fi routers are giving refugee camps a lifeline. Retrieved from WIRED: https://www.wired.co.uk/article/refugee-wifi-project-jangala-worldwide-tribe

Paul, K. (2015, March 18). The Japanese Workers Who Live in Internet Cafes. Motherboard.

Poll, R. (2012). "Afterward: The Global Village". Rutgers University Press: 160.

Poole, D. (2018). Refugee Connectivity: A Survey of Mobile Phones, Mental Health, and Privacy at a Syrian Refugee Camp in Greece. Data & Society.

Sengupta, S. (2015, September 26). Mark Zuckerberg Announces Project to Connect Refugee Camps to the Internet. Retrieved from The New York Times: https://www.nytimes.com/2015/09/27/world/americas/mark-zuckerbergannounces-project-to-connect-refugee-camps-to-the-internet.html

Smart, C., Donner, J., and Graham, M. (2016, June 03-06). “Connecting the world from the sky”: Spatial discourses around Internet access in the developing world. ICTD ‘16 Proceedings of the Eighth International Conference on Information and Communication Technologies and Development Article No. 18. Ann Arbor, MI.

Smith, A. (2012, November 2). “Sandy’s Digital Refugees Seek Wi-Fi Access”. Mashable.

Stefik, M. (1997). “Internet Dreams: Archetypes, Myths, and Metaphors” MIT Press,.

Straumann, R.K. & Graham, M. (2016). Who isn’t online? Mapping the ‘Archipelago of Disconnection’, Regional Studies, Regional Science, 3:1, 96-98. Retrieved from: https://doi.org/10.1080/21681376.2015.1116960

UNICEF. (2018). “Syria Crisis Mid-Year 2018 Humanitarian Results”. Retrieved from: https://www.unicef.org/appeals/files/UNICEF_Syria_Crisis_Situation_Report_Mid_Year_2018.pdf

UNICEF. (2016). “WASH Disability Inclusion Practices Including people with disabilities in UNICEF Water, Sanitation and Hygiene (WASH) Programming”. New York.

UNHCR. (2016b). “Connectivity for everyone”. Retrieved November 1, 2019, from UNHCR: https://www.unhcr.org/innovation-year-in-review/essay-connectivity-for-everyone/

UNHCR. (2019, January 24). Trust is still one of the biggest barriers for communicating with refugees. Retrieved from UNHCR Innovation Service, Medium: https://medium.com/unhcr-innovation-service/trust-is-still-one-of-the-biggest-barriers-for-communicating-with-refugees-56f35ea4edff

WaterAid. (2017, March 22). Gender Equality and Disability Inclusion within water, sanitation and hygiene: Exploring integrated approaches to addressing inequality. Retrieved fromWaterAid Australia: https://www.wateraid.org/au/sites/g/files/jkxoof231/files/2017-12/Gender%20equality%20and%20disability%20inclusion%20in%20WASH.pdf

UNHCR Innovation Service

unhcr.org/innovation | @unhcrinnovation