Networked Digital ICTs and the Humanitarian Arena: Challenges to Current Humanitarian Practice and Doctrine

Daniel Scarnecchia, Harvard University
Nathaniel A. Raymond, Yale University
Danielle N. Poole, Harvard University

Abstract

Much of the literature on humanitarian practice is focused on the uses of digital technology by responders. This literature does not consistently examine how such technology is being used by other actorsin the humanitarian arena and its potential subsequent effects on humanitarian outcomes. This paper explores how networked digital ICTs may be mediating information in ways that directly affect the offline nature of humanitarian crises. We draw on evidence from migration studies, political science, and social network research to demonstrate that these technologies have the potential to shape the ways in which the displaced seek aid, the nature of crises, and humanitarian governance. From this we call on the sector to establish a research agenda which seeks to comprehensively understand the range of effectscreated by networked digital ICTs on the outcomes of aid.

Keywords: *information and communications technology, humanitarian governance, global governance, humanitarian arena, displaced populations*

Since 2002, when the amount of information and data stored digitally surpassed that of analogue storage, the amount of information stored, processed, and communicated by humanity has grown by several orders of magnitude (Hilbert and Lopez 2011, 62–64; Hilbert, n.d., 3–9). At the same time, the number of unique mobile phone subscriptions is expected to rise to 5.7 billion by decade's end. Of these connections, industry trade group GSMA expects 75% to be 3G/4G mobile broadband by the end of the decade (Intelligence 2017, 6). Digital information communication technologies (digital ICTs) are now being utilized across the humanitarian programming cycle for disaster preparedness, needs assessment, aid delivery, and evaluation. Additionally, many crisis-affected populations, including displaced populations, are now perceived as tech-savvy, possessing mobile phones and relying on Wi-Fi networks and cellular coverage

("Migrants with Mobiles: Phones Are Now Indispensable for Refugees" 2017). The initial excitement about the possibilities of digital ICTs has been tempered by an increased awareness of the risks these technologies may create for the crisis-affected (Kuner et al. 2017, 14) and a growing acknowledgement of the need for a better understanding of how the crises-affected use these technologies (ELRHA 2017, 46; Vinck, Bennett, and Quintanilla 2018, 13).[1] However, further theory development and research needs to be conducted on how the global shift towards digital connectively effects the nature of crises, humanitarian response, and subsequently the crisis-affected.

Vinck et. al (2018, 19) point out that humanitarian organizations are just beginning to understand how technology—particularly networked digital ICTs—are being instrumentalized to undermine trust in our society, and the particularly worrying impacts it has on humanitarian organizations and affected peoples. The aim of this article is extend this to present a broader understanding of digital technology's affordances and potential impacts on the humanitarian sector, the crisis-affected, and humanitarian outcomes. This paper does not seek to add to the rich literature on the risks of humanitarian technology use and innovation to affected populations, per se (Kuner et al. 2017; Sandvik, Jacobsen, and McDonald 2017). Rather, it aims to discuss the mediating effects of new technologies on expressions of human agency among the crisis-affected and its potential to create new sites of contention within global politics which may shift the ordering of humanitarian governance and affect the outcomes of aid.

These broader implications effect how humanitarians understand technology use by the crisis-affected and other parties in the humanitarian arena, and subsequently how they design interventions that can meet the needs of digitally connected crisis-affected populations, protection strategies to mitigate risks to the crisis-affected, and policy designed to ameliorate efforts by ill-intentioned actors attempting to instrumentalize aid to their own ends. In addition, there are implications for how humanitarian agencies engage with large technology companies, and advocate on behalf of the interests of humanitarianism and the crisis-affected (Vinck, Bennett, and Quintanilla 2018, 19–20).

First, we examine the changing role of information in crises and look at the emerging evidence that digital ICTs are becoming an important source of information for displaced populations. In the second section, we draw on sociological work explaining the emergent nature of communities and activities through networked digital ICTs. We then explore how states and other actors contest the humanitarian arena, order humanitarian governance, and affect aid outcomes. The third section then examines three areas of concern to humanitarians for

[1] This exercise notes that 38% of humanitarian innovation and research projects are technology and communications focused, just 11% of research projects focused on technology versus 72% of innovation projects. Further, only 49% of humanitarian research is peer reviewed, and 28% do not discuss or disclose methodology. This points to a severe crisis of evidence regarding humanitarian technology. For the purposes of this report, ELHRA defined research as: "systematic investigations in humanitarian policy and practice" and innovation as "an "An iterative process that identifies, adjusts and diffuses ideas for improving humanitarian action."

evidence that networked digital ICTs are affecting aid outcomes: migration, political violence, and global politics. Finally, we draw on these examples to suggest a humanitarian research agenda which seeks to comprehensively understand the range of effects created by networked digital ICTs on humanitarianism.

The changing role of information in humanitarian crises and responses

The traditional view of humanitarian information flows is one where NGOs gather needs and information from beneficiaries and send resources downstream to those in need (Keen 2008, 156; Vinck, Bennett, and Quintanilla 2018, 44). While some interventions, such as Communicating with Communities (CWC), are predicated upon the notion that information is integral to the provision of aid (Committee 2017, 16), these downward flows of information are constructed around the idea of the affected as beneficiary and the NGO as a monopolistic provider of information. However, the displaced person is not merely a beneficiary of information, but an active agent at the centre of a complex information environment in which they may be seeking, using and transmitting information.[2] This, in turn, has the potential to shape the crisis space.

Deficits in information communicated by sources such as states and NGOs may often leave displaced people with no alternative but to turn to sources outside the organized response, such as smugglers, for information (Hannides, Bailey, and Kaoukji 2016, 23). Wall et al. (2017, 241–42) describe a state of *information precarity* "in which [the affected population's] access to news as well as personal information is insecure, unstable, and undependable, leading to potential threats to their well-being." For example, in Foran and Ianucci's (2017, 14) survey of migrants' information needs in Italy, communication of information from official sources exists in an information ecosystem in competition with unofficial sources. They found failures in information provision were created by a broad interpretation of what the law specifies needed to be supplied, a lack of translators and cultural mediation, and lack of organization. Migrants were left uninformed, and with their information needs unmet or informed by inaccurate information, migrants engaged with alternative information channels to fulfil their needs. For displaced persons residing in countries without formally designated camp settlements, such as Lebanon, reliance on informal sources of information can propagate misinformation and rumours ("Isolated and Misinformed, Syrian Refugees Struggle" 2014). In other cases, such as in Uganda's Dadaab refugee camps, lack of information was identified by camp residents as a barrier to accessing basic needs such as food, shelter, and water (Internews 2011, 27).

[2] For example, consider the interviews cited in Hannides, Bailey, and Kaoukji (2016), 25: "Many participants with mobile access explained that direct contact with other refugees who had already made the journey gave them access to a trusted network. They trusted these sources, before and during their own journeys, for advice on the best routes, smugglers' contact details, places to stay on the journey, GPS coordinates and how to avoid police to ensure they arrived at each location safely."

Similarly, in Jordan's Za'atari camp refugees reported that a lack of information hinders their access to food, medical care, and shelter (Quintanilla 2012, 11).

These highlighted cases allude to how displaced populations, as well as other populations affected by crises, are often in a state of extreme information precarity, which affects decision-making and perceived and real vulnerabilities. Emerging evidence suggests that at least some of those affected by crises in this state appear to be turning to mobile technology to meet their information needs: media reports suggest that some displaced populations prioritize mobile technology over other sources of aid (Brunwasser 2015) and that respondents perceive connectivity as critical to their survival (Vernon, Deriche, and Eisenhauer 2016, 14). Information precarity and unmet information needs thus may be intrinsically tied to the human security of affected populations.

What effect does mobile connectivity have on the overall human security of specific populations compared to others? Emerging evidence of the effects of connectivity on displaced populations offers some clues. A BBC Media Action study of refugees in Greece and Germany showed that those who maintained contact with families and had "wide communication networks" were more resilient than those who did not. They felt that greater access to information allowed them to better access aid and allowed them to make decisions about their situation (Hannides, Bailey, and Kaoukji 2016, 25). Oxford University's Humanitarian Innovation Project shows that mobile connectivity may help grow and sustain refugee economies (Betts et al. 2014, 33). In another case, preliminary results from a study undertaken in a Syrian refugee camp in Greece show that increased mobile phone use and access may be significantly associated with a reduction in the probability of being moderately or severely depressed (Poole 2017).

It is true too that while respondents to humanitarian surveys on information sources frequently assert that mobile technology is widely used, structural barriers to access may exist, including (but not limited to) gender (Internews 2011), whether the population was urban or rural (Vernon, Deriche, and Eisenhauer 2016, 12), and lack of infrastructure and service (Schmitt et al. 2016). As such, without further research into the barriers to and determinants of access, the connectivity of affected and displaced populations cannot be generalized, nor can the outcomes of aid be sufficiently predicted.

Further development of theory, evidence, and a professional understanding of the effects of information precarity on affected populations may be required to design and implement necessary interventions meeting the needs of digitally networked affected populations, particularly in refugee or displacement scenarios. Further, aid outcomes may be shaped by the unintended effects of the affected populations use of these technologies, as they may create new vulnerability by revealing data about themselves (Vinck, Bennett, and Quintanilla 2018). For these interventions to be effective and ethical, further research is needed for humanitarians to be sufficiently responsive to displaced populations that are digitally literate, mobile-connected, and using technology to coordinate and survive.

Networked Digital ICTs and the Humanitarian Arena

Before attempting to understand the barriers to access and information needs, it is necessary to interrogate the networked nature of modern digital ICTs—such as computers, mobile and smartphones—in the context of human society. What we term in this paper as networked digital ICTs are specifically those digital ICTs and platforms which connect users in both a one-to-one and one-to-many fashion—e.g., social media platforms such as Facebook and messaging platforms such as WhatsApp. These have the potential to change how displaced people communicate and seek information, alter crises themselves, and affect the global discourse around crises and humanitarian operations in ways which affect the outcomes of aid.

Networked and Algorithmic Publics

Unlike previous forms of information dissemination, such as the radio, networked digital ICTs have fundamentally different properties affecting information spread (Doerr, Fouz, and Friedrich 2012, 70). This is because networks exhibit emergent behaviour (Haglich, Rouff, and Pullum 2010, 694), there is trust inherent in peer-to-peer sharing, and weak tie networks have a propensity to introduce novel information into peer groups (Granovetter 1973, 1360). The process by which this occurs is fairly well understood. Social network theory identifies different types of ties between individuals (Haythornthwaite 2002, 389). Strong ties are close relationships, such as those between close friends or family members. Weak ties are acquaintances, or distant relationships more likely to be activated for a specific purpose rather than an emotional bond. Latent ties are relationships that exist, in a mathematical sense, but have not yet been activated, and require a social stimulus to do so. Latent ties have the potential to become weak ties. Weak ties have been demonstrated to be more important to people seeking information, as they bridge social groups and become a primary source of non-redundant or novel information (Granovetter 1973, 1360).

Connected populations of all sorts are actors engaging in communications mediated by network technology. boyd (2011, 39) suggests that "networked publics" emerge from these networks and defines them as "publics that are restructured by networked technologies. As such, they are simultaneously (1) the space constructed through networked technologies and (2) the imagined collective that emerges as a result of the intersection of people, technology, and practice."

Networked publics are made distinct by the ways technology shapes them and creates new possibilities for engagement, interaction, and information flows (boyd 2011, 39). Novel attributes of these technologies alter the manner in which people engage in social life, self-expression, and communication (boyd 2011, 48). They also introduce new dynamics that alter the social context of participants regarding privacy, place, and role (boyd 2011, 46).

The foundational vision of many of the global platforms which facilitate networked publics is one in which access to more and higher quality information by individuals will yield more informed decision-making by individuals (Askonas 2019, 9). The resulting platforms were built on engineering choices designed to foster interaction and engagement, and make legible the social connections between users and ideas. These architectural choices have not been without their downsides. The emergence of algorithms as mediators of content within these platforms have created effects which keep users engaged but subvert their foundational visions. Algorithms are, of course, designed to many ends—but many of those in the context of social media are to keep the user engaged, largely by exaggerating confirmation bias and feeding the user more of what they want to hear (Askonas 2019, 10). For example, platforms providing users interested in politicized or controversial content increasingly with extremist viewpoints which subsequently leads viewers to trust more extremist political positions (Lewis 2018, 36–37).

The vision of connecting disparate groups has been subverted by this phenomenon. The foundational promise of this technology was to connect users across interest groups. In reality, users have been more tightly connected to people sharing similar biases, affinities, and interests (Askonas 2019, 10).These "calculated publics" are shaped by the information that algorithms determine are worth sharing (Crawford 2016, 77). Subsequently, algorithmic mediation of content may create a politics of their own.

Humanitarian Governance and the Humanitarian Arena

In order to assess the effects of these new politics of the networked and algorithmic public on humanitarianism and displaced populations, it is first necessary to situate humanitarianism within global politics. Barnett (2013, 381) provides a critical definition of humanitarian governance as a "project to 'secure the welfare of the population, the improvement of its condition, the increase of its wealth, longevity, health,' and the betterment of its general well-being." He argues that this definition allows for us to focus on the consequences of aid, and understand this project as means of rule and power (Barnett 2013, 382). Understanding humanitarian governance as a means of rule affords provides us with two advantages. The first is that in considering the effects of aid, we can distinguish between a normative idea of humanitarianism, and humanitarianism as it exists in the world (Dijkzeul and Sandvik 2019, 3). Hilhorst and Jenson (2010, 1117) contrast a normative humanitarian space, constructed out norms and principles, and a humanitarian arena in which a range of "actors negotiate the outcomes of aid (Hilhorst and Jansen 2010, 1120)."

The second is that in considering the question of the processes which define what counts as humanitarian situation requiring outside intervention, he allows for us to consider that the power of humanitarian governance is contestable—viz. subject to global power politics (Barnett 2013, 382; Goddard and Nexon

2017, 10). Dijkzeul and Sandvik (2019, 12) site humanitarian governance within the humanitarian arena, and argue that many actors engaged in humanitarian action see humanitarian activities as a good to be captured or a threat to be countered. Hugo Slim (2003) puts it plainly:

> "Humanitarianism is always politicized somehow. It is a political project in a political world. Its mission is a political one—to restrain and ameliorate the use of organised violence in human relations and to engage with power in order to do so. Powers that are either sympathetic or unsympathetic to humanitarian action in war always have an interest in shaping it their way.[3]"

Platforms designed to facilitate the emergence of the networked public and algorithmic mediate content can make legible and manipulatable the connections between users and between users and ideas. These are in effect, tools of surveillance and behaviour modification (Askonas 2019, 9). In the hands of ill-intended actors, these tools are being used to monitor and control descent and they can provide leaders, states, and political entrepreneurs with the ability to manipulate public discourse and mobilize their own supporters (Askonas 2019, 11–12; Dreier and Martin 2010, 763).

Like the analogue world, cyberspace is a political space with complex power relationships, where the unique effects of networks can create new power dynamics between individual actors, groups, and states (Betz and Stevens 2011, 10–11, 108–11). In this regard, cyberspace is not a neutral intermediary that transports information between devices. Instead, it is capable of transforming, distorting, and imbuing meaning as it mediates information between devices and users.[4] We will further explore the relationship between cyberspace and the contestation of the humanitarian arena in the next section.

Humanitarianism in the Networked Age: Evidence

An examination of the impact of networked technology on three related realms of inquiry—migration, political violence, and global politics—can inform an understanding of how these technologies may be transforming humanitarian crises and affecting humanitarian governance. First, we focus on migration and displaced populations. The use of networked digital ICTs by displaced peoples has the potential to change how they communicate, seek information, and aid, and alter crises themselves, and affect the global discourse around crises and humanitarian operations. It also has the potential to upend the traditional humanitarian hierarchy of provider and affected population (Barnett 2013, 389), and it provides a means for as affected populations, including the displaced, to

[3] See also: Collinson and Elhawary (2012), p.3

[4] For a discussion of the distinction between intermediaries and mediators, see Latour (2005), 38; For readers interested in current debates around how cyberspace functions as a mediator and its role in constructing reality, see Couldry and Hepp (2017).

become participants in the humanitarian arena as they advocate for their own role in humanitarian action (Vinck, Bennett, and Quintanilla 2018, 14 & 64).

The section on political violence examines how networked publics have the potential to create humanitarian crises. It takes considers the role of networked digital ICTs in creating new politics within Myanmar which may have affected the timing and severity of the Rakhine crisis.

Third, the section on global politics provides two cases as evidence of the potential effects of networked digital ICTs and their emergent publics on the humanitarian arena and how they may contribute to humanitarian outcomes. The first case examines the role of disinformation spread via these networked technologies in contesting the humanitarian arena in Syria and its effect on humanitarian outcomes. The second examines the role of the networked public in effecting the positions and desired outcomes of states as actors in the humanitarian arena during the 2014 Ebola response.

Migrants can be displaced populations, but not all displaced populations are migrants. At the time of writing, much of the scholarly literature examining the effects of the use of digital ICTs by migrant populations are focused on migrants as a whole—particularly economic migrants. For the purposes of this paper we ignore the distinction as a starting point by which we can present evidence that digital ICTs and networked digital ICTs affect population movements and decision-making. However, the distinction between migrants as a whole and displaced populations is salient: Displaced populations are often particularly vulnerable and are governed by specific legal regimes.

The link between displaced populations and the effects of networked digital ICTs on political violence and global politics is perhaps less intuitive, but they are connected in operational reality and as loci for contests over the consequences of humanitarian aid (Dijkzeul and Sandvik 2019, 12). As an operational reality, political violence is often a source of displacement, and there is a nexus between the vulnerability of displaced populations and political violence ("OHCHR Questions and Answers About Idps," n.d.). Once a population is displaced, their legitimacy within a secondary country or status as affected can be contested by similar means. States and non-state actors pursue their interests in the international political space, which may not always in line with the best interests and rights of displaced populations or humanitarian values. This is made manifest as political settlements to resolve displacement and end conflicts may be blocked, the question of whether it is safe for displaced populations to return to their country of origin becomes politicized, or states which may seek to build support for various interpretation of international law undermine the rights of the displaced and crisis-affected.

The Impact of Digital ICTs on Migration and Displaced Populations

Migrant networks as a whole and their use of networked digital ICTs have been studied extensively in both the scholarly and grey literature (Schapendonk and Moppes 2007). Even before the advent of digital technologies, migrants have always communicated amongst themselves and back home, and these social networks function as a source of information and social capital (Dekker and Engbersen 2014). Increasingly, these networks are thought to reduce risk, influence decision making, and mobilize financial resources and collective intelligence in ways that shape movement patterns across environments and influence outcomes (Tilly 1991, 84–85; Poot 1996, 65–66; Massey and García España 1987, 737; Wissink and Mazzucato 2017 ; Boyd 1989 ; Thulin and Vilhelmson 2014, 389). These networks tend to extend themselves, and migrants often follow other migrants (Tilly 1991, 86). While these networks have always existed, theory and evidence suggests that their digitization may be affecting the nature of migration.

Even before the advent of mobile internet, access to digital ICTs has been shown to play a role in the development of weak ties between aspiring migrants and the diaspora, specifically for seeking information about migration (Hiller and Franz 2004, 738). For some time, the internet has been a source of information for migrants—irregular or otherwise—in the form of chat rooms, websites, and Bulletin Board Services (Hiller and Franz 2004, 738–39). For example, a 2007 report commissioned for UNDP references websites that reportedly provide detailed guidance to aid in journeys, and forums for communicating with other potential migrants (Hamel 2009, 17). With the advent of social networking sites, the process of developing and maintaining these ties has been made easier and is shown to lower the threshold for immigration (Dekker and Engbersen 2014, 408).

Migrants use digital information sources as a tool for deciding where to migrate, to reduce anxiety around decision making and as a mechanism for finding support upon relocation (Ros et al. 2007 ; Thulin and Vilhelmson 2014, 395–96). These transformations facilitate the spread of information and foster the creation of social capital by migrants (Dekker and Engbersen 2014, 408; Hiller and Franz 2004, 748–49), which may ultimately influence individuals' decisions to migrate in response to information about the availability of jobs, housing, and settlement assistance (Dekker and Engbersen 2014, 407).

In addition to information about the migration process, networked digital ICTs are used by migrants in other ways. Refugees and migrants have been documented using mobile phones to share information, coordinate among each other upon arrival and monitor for perceived threats (Harney 2013, 548). When Hannides et al. (Hannides, Bailey, and Kaoukji 2016, 25) asked refugees who have mobiles why they feel more resilient and less vulnerable, they found:

> "Many participants with mobile access explained that direct contact

> with other refugees who had already made the journey gave them access to a trusted network. They trusted these sources before and during their own journeys, for advice on the best routes, smugglers' contact details, places to stay on the journey, GPS coordinates and how to avoid police to ensure they arrived at each location safely."

At the same time, some migrants view mobile technology as a potential source of risk: an avenue for tracking and monitoring by authorities or non-state armed groups and of abuse and extortion by criminal elements (Newell, Gomez, and Guajardo 2016, 184–85).

Recent work applying quantitative social network analysis to migrant networks finds that migrants with transnational networks receive more information and financial resources than migrants with smaller local networks (Bilecen and Cardona 2017, 9). Networked digital ICTs may play a role in transforming migrant experiences into far more transnational experiences, as the immediacy and density of their transnational communications increase (Nedelcu 2012, 1346–52). Thus, mobile connectivity may be strengthening latent and weak ties in the social networks of migrants in a manner that influences their decision-making and creates new benefits and risks.

The Impact of Digital ICTs on Manifestations of Political Violence

Political violence and conflict are a major source of displacement, as well as sources of increased vulnerability for the displaced (Hannides, Bailey, and Kaoukji 2016, 25). While the literature on migration demonstrates how individual behaviour may change due to the influence of networked digital ICTs, as an aggregate, individuals constitute and exist in larger publics, such as states. It follows then that networked digital ICTs may affect society, including the outbreak of uprisings and conflicts, and factor into the causes of displacement and humanitarian crises.

In the aftermath of the Arab Spring and response to the perceived role of mobile communications and social media in the genesis of those protests, the political science literature has devoted discussion to the role of ICTs and mobile communications coverage and the onset of political violence and protest (Dafoe and Lyall 2015). This has produced findings—albeit contradictory and limited—covering the relationship between increased cellular network density and the onset of violence (Pierskalla and Hollenbach 2013 ; Shapiro and Weidmann 2015 ; Bailard 2015) and has raised debate about whether connectivity has a prophylactic effect—helping civilians avoid or prevent violence—or a harmful effect, making violence more likely and more organized.

The contradictory nature of this evidence may exist in part because the proxy for connectivity used in these studies is mobile communications network coverage. In a 2G world, this proxy may have been sufficient for making determinations about the impact of mobile ICTs on conflict, but the expansion of networked

digital ICTs and 3G technology may tell a different story. Myanmar provides a telling example: A study by Bergren and Bailard (2017) find no significant relationship between mobile phone reception and the rate of violence between ethnic groups and the government in Myanmar. However, the paper uses mobile communications coverage as a proxy for mobile phone access (Bergren and Bailard 2017, 899), and Bergren and Bailard believe it is unclear how well their paper relates to violence against the Rohingya (Bailard 2017).

Indeed, the UN posits a link between the rapid growth of connectivity in Myanmar and the government's ethnic cleansing campaign against the Rohingya in that country's Rakhine state (Council 2018, 16–18). Evidence has emerged in the media of a coordinated effort by the Myanmar military to deliberately use Facebook to incite violence and turn society against the Rohingya (Mozur 2018).

Myanmar has leapfrogged from nearly zero connectivity to widespread access to the internet. In 2011, fewer than .02% of the country of 50 million was connected to the internet—by November 2016 that number had reportedly soared to 35 million (Frenkel 2016). Facebook, through its Free Basics program—in partnership with state telecom provider MTN—is reportedly integral in connecting many of these to the internet—the platform now has 30 million users in Myanmar—many of whom don't interact with the internet outside of Facebook (Roose 2017). Facebook has been implicated in the spread of anti-Rohingya and anti-Muslim sentiment, hate speech, and disinformation by political figures, extremists and everyday people in Myanmar (Specia and Mozur 2017 ; Beech 2017).

The Impact of Digital ICTs on Global Politics

If the potential exists for networked digital ICTs to disrupt politics on a national level, so too does the potential for networked digital ICTs to affect international politics in ways which may negatively affect vulnerable populations, including refugees and displaced populations. This section seeks to illustrate that the global networked public, constituted of networked digital ICTs, is a repertoire for contestation of the humanitarian arena. This contestation, and the resulting range of possible outcomes, has ramifications for all categories of crises-affected populations, including the displaced. This may result, for example, in the undermining of rights and protection of civilians, or, as may have happened in the case of the Global Compact for Migration, the undermining of the rights of the displaced (Cerulus and Schaart 2019).

The role of networks in influencing global politics is also well established. Carpenter rightly points out that relational ties between actors are politically salient, and when understood this way are known to affect transnational trade, conflict, and enterprise (Carpenter 2014, 566–81). Civil society advocacy and the phenomenon of issue emergence in areas of human rights and law are particularly well-studied through this lens (Price 2003 ; Carpenter 2007). Networks of actors

are adept at strategically deploy information to influence target organizations and actors (Keck and Sikkink 1998, 2). Further, information technology as a means by which civil society and other non-state actors strengthen networks, fostering information exchange, and engage in advocacy activities across borders (Keck and Sikkink 1998, 19–21, 28–32). Technology makes geographic distances become less relevant and the need for certain traditional elements of power—particularly human and economic capital—is significantly reduced (Betz and Stevens 2011, 102; Kramer, Starr, and Wentz 2009, 41).

For humanitarians, what may be most important is that technology's effects can be harnessed by political actors to create new political settlements (Sandvik 2016, 21). Of course, this isn't a new phenomenon per se, nor is it the first-time networks can be said to have affected the global order.[5] The novel dimension to modern global social networks, however, is that unlike preceding mediums that facilitated the formation of networks, these platforms have user bases which can exceed the populations of even the largest nations on earth (Zuckerberg 2017 ; Welch 2017 ; Lanchester 2017). This becomes more relevant in an era, as ICRC President Peter Maurer (2019) notes, where two trends threaten to undermine the communality and consensus which forms the basis of International Humanitarian Law: regional and global power competition and the emergence of cyberspace as a battlefield.

Syria provides a case of state and non-state actors working collaboratively to influence public discourse and affect strategic outcomes: Media reports and research points to a sustained influence campaign targetting Syria Civil Defence, also known as the White Helmets (Solon 2017). Wilson, et. al. (n.d.) find that this campaign is often a collaborative effort between state media, western anti-war activists, and alternative medias to produce narratives supporting the strategic objectives of specific warring parties to the conflict or to countering those of western human rights actors and states. These narratives contest civilian status of the White Helmets under humanitarian law by labelling them tools of foreign influence, terrorists, and blaming them for chemical weapons attacks. These efforts have been successful—online discourse is dominated by content meant to delegitimize them and justify their killing (Starbird, Arif, and Wilson 2019).

This example demonstrates three ways in which the global networked public is being used to contest the humanitarian arena in Syria. The first is in controlling

[5] e.g., Religious networks during the European wars of religion may have forged new identities across national borders and constrained the abilities of leaders to mobilize against crises and reconfigured power relations in Europe. That these networks were pre-digital should not discount the potential impact of networked digital ICTs to reconfiguring power in the modern world—recalling that the printing press played an important, albeit non-deterministic, role in the spread of new religious ideas and identities in Early Modern Europe. The change in the scale and reduction in cost by which information which could be distributed following the invention and diffusion of Gutenberg's movable type into society has few analogues save the invention of radio, television, and the internet. For more see: Nexon (n.d.), 33; and Barzun (2001).

the outcomes of aid: Humanitarian aid has been instrumentalized in the Syrian conflict (Parker 2013 ; "Report of the Independent International Commission of Inquiry on the Syrian Arab Republic" 2018a, 4; "Report of the Independent International Commission of Inquiry on the Syrian Arab Republic" 2018b, 9 & 16) and local actors—such as the White Helmets—have sought to provide aid in areas international humanitarian organizations cannot access (Abdelwahid 2013). In controlling narratives about these local actors, warring parties are able to continue targeting them, and further constrain aid to contested territories. The second is the use of these narratives to contest the legitimacy of who gets to be a humanitarian in Syria—in painting local actors as terrorists or tools of a foreign power, warring parties and their online collaborators seek to undermine claims to neutrality and impartiality. Third, in seeking to undermine the status of these actors as civilians under international law, they seek to constrain normative humanitarianism in a way that controls humanitarianism outcomes.

This sort of use of networked digital ICTs can be understood as part of what Goddard et al., call a repertoire of social disruption, a means by which states and other actors to create division within an opponent's population, with the aim of deterring action against their interests by inhibiting the ability of opponents to collectively mobilize (Goddard, MacDonald, and Nexon 2019, 10). States participate and shape this environment in multiple ways—from leveraging flagship state media outlets, supporting and amplifying friendly journalists, to pushing out a range of content on aligned but ostensibly independent websites (Starbird, Arif, and Wilson 2019, 13). Thus the means by which these narratives are spread are also salient: Narratives are packaged into campaigns resemble astroturfing campaigns, repackaging content to appeal across ideological and political divides (Starbird et al. 2018). This games the media ecosystem by flooding search results with preferred narratives, as well as ultimately undermining trust in available information (Starbird, Arif, and Wilson 2019, 13). Put plainly, digital networked ICTs provide a toolkit by which ill-intentioned actors can create uncertainty in states or organizations which would otherwise be invested in normative humanitarian approaches by using them "to identify and target fragmented populations, to feed them disrupting information more directly, and isolate audiences from competing claims (Goddard, MacDonald, and Nexon 2019, 10)."

The unique topological features of digital networks increase the speed and distance at which information and misinformation can spread (Doerr, Fouz, and Friedrich 2012, 70). Opportunistic actors may be able to exploit this to convert misinformation into disinformation campaigns (Sunstein and Vermeule 2009). These campaigns often attempt to challenge or undermine dominant media narratives (Starbird 2017, 10). Indeed, the use of networked digital ICT platforms by state and non-state organizations to achieve strategic goals related to political, geopolitical, or military outcomes by influencing public discourse is now well documented (Weedon, Nuland, and Stamos 2017, 4).

It is also the case that the networked digital ICTs—through the mediation of the global networked public—may affect humanitarian action in ways that

are not all together as deliberate as instrumentalization by warring parties or states. Roberts et al. note that the widely discussed social media clusters oriented towards US politics may have led US policymakers to act and impose quarantines—in violation of International Health Regulations (IHR) (Roberts et al. 2017, 53–55). They argue the global networked public itself may have produced emergent effects that shaped the discourse around Ebola and ultimately affected policy outcomes, including the diversion of critical resources and the violation of IHR (Roberts et al. 2017, 51–52). Their research showed a disconnect between global health experts—who were influential among the traditional media and the discourse among the general public—whom global health experts failed to influence. Within social media, public discussion was disproportionately oriented towards the risk of US domestic cases. Thus, new politics may emerge organically from network behaviour (Haglich, Rouff, and Pullum 2010), and intersect with traditional media and polity in a manner which the Roberts et al. (2017) argue impose constraints on humanitarian response.

Humanitarianism exists in a world that is both political and densely networked in the digital sense. These networks comprise a complex system, capable of emergent behaviours which may exhibit a politics of their own (Haglich, Rouff, and Pullum 2010, 695). Networked digital ICTs—may create centres of institutional power that are wielded within the political space governing humanitarian response (Sandvik 2016, 21), and which may be manipulated by actors who are hostile to or seek to co-opt influence the humanitarian arena. ICTs may also create emergent loci of power with the ability to affect public discourses in such a way that drives policymakers to act—even in violation of international law. Vinck, et al. (Vinck, Bennett, and Quintanilla 2018, 44) note that humanitarians need to better understand a potentially contentious and divided media ecosystem. Their focus is on the potential for the erosion of trust between humanitarians and local populations. We argue that, similarly, humanitarians need to better understand how the global networked public and networked digital ICTs can undermine normative humanitarian action and be used to manipulate the humanitarian system.

A Research Agenda for Humanitarianism in the Digital Age

In the previous subsections, we have provided examples of the potential effects of networked digital ICTs on the humanitarian arena, and how these may in turn affect the nature of the crises and the outcomes of aid. In order to acheive a more full understanding, the humanitarian sector needs to pursue a comprehensive research agenda focused on the range of effects networked digital ICTs are having on humanitarian operations and outcomes. In the next two subsections, we suggest two possible areas of research. The first seeks to understand the barriers to ICT access and use among displaced populations, as well as defining what constitutes information needs among the affected. The second seeks to understand on how other actors—armed groups, NGOs, advocates, political

actors, and states—use networked digital ICTs to contest the humanitarian arena, order humanitarian governance, and shape the outcomes of aid. This agenda should not focus on how humanitarian actors are using these technologies, as much research already exists in this space.

Barriers and facilitators to information technology access and use

The emergence ofcrisis-effected networked publics may give affected populations a new voice for advocacy, and digital ICT-mediated networks may create new opportunities for the displaced to find aid, self-rescue and communicate with humanitarians. It may also create new risks and harms for these populations as they use networked digital ICTs to fulfil their information needs (Vinck, Bennett, and Quintanilla 2018). However, without a clear understanding of the determinants of access to these networks—such as gender, age, socio-economic status, or information preferences, information needs cannot be appropriately evaluated, and humanitarians run the risk of not perceiving the needs of vulnerable unconnected communities, even within connected populations.

Existing evidence on displaced populations' medium of choice for obtaining information seems to indicate that these affected populations have varying preferences regarding the type of communication tools that they use. This is in part dependent on who is asked, and in part possibly determined by the time and location. In some instances, radio may be the preferred mode of information access (Internews 2011); in others, it may be television and word of mouth ("Inter-Agency Rapid Assessment Report: Understanding the Information and Communication Needs Among Idps in Northern Iraq" 2014, 15). Mobile telephones may be seen as less trustworthy sources of information than others (Quintanilla 2012 ; Internews 2011) or even as a vector for potential threats (Maitland and Xu 2015 ; Newell, Gomez, and Guajardo 2016, 184–85). In Italy, where migrants originate from Africa, the Middle East, and Central and South Asia, the utilized sources of information vary widely and include word of mouth, Facebook, messaging applications, mobile telephony, and satellite TV. Social media access plays a major role in facilitating the communications needs of many of the migrants surveyed by Internews in Italy in 2016 (Foran and Iacucci 2017, 12). This same report finds that smugglers dominate the information landscape in both analogue and digital networked communication—that is, word of mouth and social media communication—and that information access varies by country of origin for a number of reasons (Foran and Iacucci 2017, 12–13).

Vernon et. al found parity between the global average and urban refugees in terms of access to 3G networks, but access significantly lags the global average among rural refugee populations, regarding both 3G access and mobile access overall. It also finds that most refugees own a mobile phone, and nearly 39% have a phone capable of internet access (Vernon, Deriche, and Eisenhauer 2016, 12). Nevertheless, divides in access to mobile phones persist, and not enough information is available to determine a conclusive reason for these disparities.

In 2015, 89% of refugees at Za'atari Camp in Jordan reported owning a mobile phone (Schmitt et al. 2016, 25); however, 52% of refugees surveyed arriving in Greece that same year said they did not have access to a phone (UNHCR 2015, 15). In their study of Za'atari, Maitland and Xu observed that the relative wealth of Syrian refugees made them more likely to use mobile technology to connect to the internet than refugees surveyed in Rwandan camps they visited, which were limited to voice and text on mobile platforms (Maitland and Xu 2015, 7). Maitland and Xu also find that gender did not affect mobile phone ownership rates in Za'atari (Maitland and Xu 2015, 8), however, information preference and needs surveys carried out by Internews found that gender divides exist in both Northern Iraq and Kenya's Dadaab camps ("Inter-Agency Rapid Assessment Report: Understanding the Information and Communication Needs Among Idps in Northern Iraq" 2014 ; Internews 2011).

Within the context of information behaviours by displaced people, attention should be paid to the behaviours around and barriers to access related to networked digital. The literature has begun to show that a number of social factors may play into digital exclusion among crisis-affected populations. For example, Wall *et al.*'s (Wall et al. 2017) link between information precarity and the stability and security of a person is a complex one, with many intervening factors and a range of potential outcomes which need to be better understood. Wall suggests a context-driven theory: the credibility of information about accessing aid in the camp is viewed by the affected through a history of scepticism of information from official channels due to a lifetime in an authoritarian country where misinformation and propaganda were the norms.

Given the potentially transformative effect of these networked digital ICTs on humanitarian outcomes, it is critical to understand these barriers and facilitators. Poole's research demonstrates a significant link between mental health outcomes and phone access in affected populations. However, a significant barrier to access was ownership, which was in turn associated with gender. Returning to information seeking behaviour models, this socio-cultural barrier mediates an individual's ability to access technology, which in turn affects their access to information and may ultimately impact their health (Poole 2017). Additional literature suggests that access to mobile phones improves economic outcomes and resilience in crisis-affected populations (Hannides, Bailey, and Kaoukji 2016 ; Betts et al. 2014). These studies need to be supplemented by further scholarly research that explicitly measures phone access against additional health outcomes, and other aid metrics, such as food security.

Understanding the information landscape will give humanitarians evidence for how to better design response. The available evidence already indicates that information related needs may be going unmet. For example, the strategy of using and sharing multiple SIM cards—a practice Maitland noted was used by the displaced in Za'atari to avoid perceived Syrian surveillance, avoid network congestion and manage costs—makes it difficult for camp staff to push out information to camp residents via SMS or telephone. Camp economies have been

seen to change in Za'atari, driven by this trade and the need for phone charging stations and internet access. The physical geography of camps will affect the ability of displaced populations reliant on mobile and smart phones to access information. It is unclear is how this affects social and economic stratification within camps (Maitland and Xu 2015).

An information need is inherently instrumental, in that it is a recognized or perceived gap in knowledge or information thought necessary to achieve a desired end state or goal (Green 1990). In turn, information seeking is a conscious activity, designed to fill the gaps required to achieve a goal or reduce uncertainty around such a pattern or gap (Case and Given 2016, 89–91). To place information precarity in context, and to address its effects, it is necessary to understand the barriers to information access—social, physical, and psychological—as well as the motivations, needs and uses of information in the context of humanitarian crises, particularly sustained crises. Understanding the factors that both frustrate and satisfy displaced people's information needs is critical to improving humanitarian response. Without evidence guiding the diagnosis of a displaced populations information practices and eco-system, the humanitarian responder is unable to claim that they are adequately meeting needs in the 21st century.

Digital Networked ICTs and Contestation in the Humanitarian Arena

Langdon Winner (1980, 123) famously asked: "Do artifacts have politics?" He argued that this might be the case in two ways. In the first, a specific technology may provide the means by which political actors may capture power—or in his language "settle an issue." In the second, technologies may exhibit properties which rearrange social and political systems. Networked digital ICTs may display aspects of both—and properties which create positive effects at the individual level may have harmful effects on the macro-level. This may represent a paradox of protection: While these technologies may give individual displaced people new tools for wayfaring, decision making, and advocacy, the aggregate effects of these same technologies may also erode protective norms and produce political settlements that constrain humanitarians' ability to respond.

Increasingly, the lines between offline and digital life are blurring (Floridi 2014), and the interplay between society and technology may be producing new politics and means of contesting the humanitarian arena and ordering humanitarian governance. This paper's sections on political violence and humanitarian governance show that networked digital ICTs may exacerbate violence, inflame political tensions, or shift policy choices which may in turn impact the human security status of affected individuals and humanitarian operations—as demonstrated by Twitter's purported impact on the Ebola respons (Roberts et al. 2017) and the role of social media in shaping the humanitarian arena in Syria (Starbird et al. 2018 ; Starbird, Arif, and Wilson 2019). This assemblage of the human and digital has the potential to create additional possible vectors for harm—the production of mutually supporting alternative narratives based on misinformation

or disinformation (Starbird 2017, 5) and of politics which explicitly impact the human security status of the affected.

The questions raised here are broader than humanitarianism. As a sector whose normative *raison d'etre* is the prevention of suffering and alleviation of harm, humanitarianism stands in a position where it can see the emergence of these effects on the most vulnerable of populations. It is critical for humanitarians to examine not just individual components of the system, but to foster testable theoretical approaches to understanding how harmful effects emerge, order humanitarian governance, and affect the outcomes of aid.

Conclusion

In the sections above, this paper has looked to literature outside the humanitarian field to draw inferences about phenomena that may be affecting humanitarian crises, including: how displaced populations may be seeking information and the role that networked digital ICTs have in meeting and changing their information needs, as well as the potential barriers to access. We also discussed how access to networked digital technology may affect the decision-making of the displaced, as well as potentially affect their ability to self-advocate, thus affecting the humanitarian arena and strategies required on the part of humanitarians to achieve ideal aid outcomes.

We also discussed how these how networked digital ICTs are changing crises on a larger scale. First, by raising unanswered questions about their role in fostering conflict and subsequently generating or exacerbating existing humanitarian crises. Second, by looking at how they may alter the operational and political landscape in which crises occur and be used as means for contesting the humanitarian arena and ordering humanitarian governance.

This paper highlighted a series of gaps in the evidence and knowledge confronting humanitarianism related to the use of networked digital ICTs. To comprehend these changes, it is necessary to develop an understanding of how networked digital ICTs are transforming the humanitarian arena. Our understanding of the impact of networked digital ICTs on the crisis-affected, including the displaced, the humanitarian arena, and the resulting effects on humanitarian outcomes is limited. It is incumbent upon the humanitarian sector to foster a research agenda for defining the information needs of displaced populations, understanding how they are using networked digital ICTs to fulfil them, how access to these technologies may be changing their decision-making, and how their use of these technologies, in hand with how other actors in the humanitarian arena, including states, armed groups, and humanitarians, is affecting humanitarian outcomes pertaining to the needs and protection matrix of the displaced and indeed all crisis-affected populations. Addressing and understanding these questions may determine what humanitarianism means and does in the 21st century.

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