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Humanitarian Innovation in Forced Displacement

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The United Nations High Commissioner for Refugees (UNHCR) has been at the forefront of major humanitarian innovative undertakings in the forced displacement context. From the launch of Project Profile, geared to address the lack of identification documents (IDs) among refugees through biometric systems, to the use of machine learning techniques to detect xenophobia against refugees, the UNHCR has been experimenting with different technical solutions to ostensibly address complex operational challenges in humanitarian settings. This article uses the case study of the UNHCR to analyze sociotechnical changes that can be observed throughout the organization's innovation journey over the last two decades—before and after the establishment of the UNHCR Innovation Service. I particularly grapple with this question: What is distinct about the current logic of innovation at the UNHCR? Drawing on content analysis of publicly available reports, articles, and policy documents, I suggest that the establishment of the Innovation Service at the UNHCR enables the agency to internally experiment with novel sociotechnical systems while also reinventing its collaborative undertakings with public and private stakeholders to meet its humanitarian goals effectively.

Keywords: humanitarian innovation, technology, forced migration management, data-driven, sociotechnical changes

In recent years, there has been a growing trend toward the use of novel data-driven systems to address complex humanitarian challenges. The turn to humanitarian innovation is driven by the recognition that traditional models and approaches to humanitarian emergencies have often proven insufficient in meeting the needs of vulnerable populations affected by crises. Where forced migration is concerned, technological solutions ostensibly offer new opportunities for improving the effectiveness, efficiency, and sustainability of humanitarian responses and bolster efforts to protect vulnerable populations of refugees, asylum seekers, and internally displaced people. For many bureaucratic humanitarian organizations, innovation is viewed as "new and more efficient solutions" (Bruder, Baar, Ramani, & Santos, 2022, p. 5) to better meet their operational needs amid limited resources. Given United Nations High Commissioner for Refugees (UNHCR)'s pivotal role in forced migration management and the protection of vulnerable forcibly displaced populations, this article focuses on sociotechnical changes in the organization's innovation journey over the last two decades. First, I examine the contours of innovation at the UNHCR by juxtaposing the period before and after the launch of the agency's innovation unit (the Innovation Service) to identify changes and continuities in the organization's innovation structure. Second, I discuss the complexities of humanitarian innovation in forced displacement to highlight the dynamics of humanitarian innovation and its implications on the rights of refugees and other forced migrants.

Changing Contours of Innovation at the UNHCR

Before the UNHCR launched its own innovation unit in 2012, partnerships with private tech companies made many projects that the organization embarked upon possible (Ambos & Tatarinov, 2019; Lodinová, 2016; *UNHCR and IOM Announce*, 1999). One of the key projects that came out of UNHCR's partnerships was in 1999, following the refugee crisis in Kosovo, whereby the organization partnered with Microsoft to develop what came to be known as Project Profile (Lodinová, 2016; *UNHCR and IOM Announce*, 1999). This project aimed to address the lack of identification documents (such as national ID or passport) among refugees by conducting biometric registration—collecting personal characteristics like fingerprints and facial structure for verification purposes (*Afghanistan: New Technology*, 2002; Lodinová, 2016). However, despite the potential of Profile in facilitating refugee registration and streamlining resettlement processes (Goldstein-Rodriguez, 2004; Sunjic, 2004), UNHCR's collaborations with private sector entities were strongly criticized for introducing new risks and harms to the already vulnerable populations (Hosein & Nyst, 2013; Jacobsen, 2015). For example, in efforts to repatriate and provide relief to Afghan refugees in the Afghan-Pakistan border (Peshawar) in the early 2000s, UNHCR began experimenting with iris-recognition technology—developed by BioID Technologies, a biometric company—to counter "fraudulent claims" for repatriation assistance (Jacobsen, 2015; Kessler, 2002; *UNHCR Refugee Identification System*, 2014). It was noted that "the iris-recognition technology being tested in Peshawar would enhance UNHCR's ability to identify genuine returnees entitled to the one-time return assistance package" (Kessler, 2002, para. 9). By 2007, the UNHCR began to enforce iris recognition on "all returning Afghans wishing to obtain travel and reintegration assistance" (UNHCR, 2007, as cited in Jacobsen, 2015, p. 60). Biometric systems are now enforced in "79 UNHCR operations globally," including Jordan, Kenya, and Turkey (*Biometrics*, 2022, p.1).

The establishment of the Innovation Service came at a time when many bureaucratic organizations in the humanitarian sector began to seek alternative models to effectively meet the needs of vulnerable populations while upholding fundamental humanitarian principles. The Innovation Service has grown from a small team of four to an "interdivisional initiative" not only responsible for "creating and disseminating new ideas and knowledge" across the agency (*UNHCR Headquarters Organization Chart*, 2023, p. 5) but also for mobilizing funding from governments, the private sector, and other entities to support various UNHCR field offices (*Innovation Fund*, n.d.). The UNHCR Innovation Service is involved in a myriad of innovative undertakings ranging from big data and artificial intelligence projects to projects seeking to promote digital inclusion of the forcibly displaced people in host countries. This article pays attention to the organization's innovative approaches, tools, and methodologies that utilize novel technologies and analytical systems to transform its operations and bolster its humanitarian mission. Innovation Service's current portfolio on big data and artificial intelligence includes Project Jetson (a predictive analytics experiment seeking to understand migration patterns and forecast refugee movements at and across borders); Epidemic Simulation Modeling of COVID-19 in refugee settings (a joint initiative implemented in Cox Bazaar refugee camp in Bangladesh to simulate the movements of refugees and daily interactions to fight the spread of coronavirus in the camp); and text analytics for online hate speech monitoring and protection (the use of social media data and machine learning models to detect xenophobia against refugees in host countries; *Digital Innovation*, n.d.). Unlike earlier undertakings such as Project Profile, the innovation team at UNHCR regard ongoing experimentations with novel technologies as safe, given that humanitarian technologists and

data analysts inside the organization are responsible for these developments (Baykurt & Lyamuya, 2023; *Innovation at the UNHCR*, 2019).

UNHCR's recent drive for innovation is largely attributed to the growing severity of humanitarian crises that have increasingly imposed new challenges on humanitarian organizations (Earney & Moreno Jimenez, 2019; Pham & Luongo-Oroz, 2022) as well as technological advancements and burgeoning digitalization taking place in public and private sectors (Bruder et al., 2022). Drawing on content analysis of publicly available reports and policy documents by the UNHCR and academic articles, publications, and promotional materials from UNHCR Innovation Service's website, I find that the UNHCR justifies its recent experimentations with novel analytical systems and algorithmic tools on these grounds: (1) efficiency in humanitarian logistical operations and (2) effectiveness in humanitarian advocacy. First, given that humanitarian responses in recent decades have been criticized for being reactionary rather than proactive (Barnett-Vanes, Hung, Maruthappu, Shalhoub, & Chan, 2013; Richardson, Bush, & Ambroso, 2013) the UNHCR sought to shift its approach by adopting more systematic processes such as tracking and modeling of refugee mobility using historical data to anticipate future border movements (Baykurt & Lyamuya, 2023; Earney & Moreno Jimenez, 2019) or prevent the spread of COVID-19 in refugee camps (Aylett-Bullock et al., 2021). Second, in their reporting, the Innovation team has maintained that technologies like artificial intelligence "allow humanitarian innovators and data specialists to compile, process, and visualize the huge amount of data in a matter of seconds" (Moreno, 2017, para. 3). From the team's perspective, machine learning allows them to efficiently make use of the vast amount of publicly available data (such as Twitter data) to draw insights that enable the agency to effectively support the forcibly displaced and their humanitarian needs.

Besides, the current innovation turn in the humanitarian sector cannot be fully understood without considering the funding shortfalls that many international organizations now encounter. Faced with an unprecedented funding gap in recent years (*Consequences of Underfunding*, 2020; Tanner & Mwenda, 2020), the UNHCR is forced to adopt the practical measures at its disposal to be able to support its operations. At the Innovation Service, partnerships with stakeholders from private, government, academic, and humanitarian sectors have become integral to how the division has been able to test and scale its innovation (*Innovation at the UNHCR*, 2019). For example, various projects at the Innovation Service are made possible through donations from wealthy governments like those of Belgium and Luxembourg (*Innovation Fund*, n.d.; Tanner & Mwenda, 2020). Existing studies point out that the enthusiasm and commitment of humanitarian organizations to develop and adopt cutting-edge technological solutions in migration governance often attract investments from wealthy governments and private tech corporations (Chouliaraki & Georgiou, 2022; Scott-Smith, 2016). Thus, through experimentation with novel tools and techniques to address different complex issues in forced displacement settings, the organization strives to showcase the potential of innovation and also attract investment from new sources of funding.

Complexities of Innovation in Forced Migration Management Ecosystem

With about 83% of the global population of refugees being hosted in developing countries like Colombia, Uganda, and Pakistan (*Global Trends Report*, 2022), it is important to interrogate current approaches to data-driven innovation in "migration governmentality" (Tazzioli, 2022) relative to global

power asymmetries in humanitarianism. Critics caution that humanitarianism has increasingly turned to "a political mode of controlling territories" (De Lauri, 2016, p. 1) and managing human mobility (Duffield, 2001). Instead of taking humanitarian innovation at its professed values—what humanitarian practitioners proclaim as intended actions—there is a need to investigate the "complex relationship between values" and actual humanitarian practices (De Lauri, 2016, p. 11). Despite the cited potentials of these innovative interventions, Chouliaraki and Georgiou (2022) provide that "the global control of migration takes place within the hegemony of western epistemology of earth" (p. 3). Ongoing tracking and modeling of refugee movements at and across the border through projects like Jetson leave open the possibility for host governments to extend their reach and plausibly make it more difficult for asylum seekers to cross the border, let alone obtain asylum (Baykurt & Lyamuya, 2023). Thus, rather than promoting the rights of refugees, tracking migration patterns and predicting border movements can expose already vulnerable subjects to unforeseeable sources of harm (Madianou , 2019; Molnar & Gil, 2018; Tazzioli, 2022).

Contemporary humanitarian innovation is "enamored with technology" and "infused with the entrepreneurial spirit and ambitious sensibilities of Silicon Valley" (Scott-Smith, 2016, p. 1). Moreover, innovation in bureaucratic humanitarian organizations is closely linked to "cost-effectiveness and efficiency" (Bruder et al., 2022). As a result, innovative processes in humanitarian settings mainly focus on "technical fixes and new products" (Müller & Sou, 2019). The time and resources that humanitarian organizations spend to navigate the piloting process before they can benefit from the scaling of innovation processes are often understated in the current description of UNHCR's technological innovation (Ambos & Tatarinova, 2019). Brayne (2017) emphasizes that "when new technology is overlaid onto an old organizational structure, long-standing problems shape themselves to the contours of the new technology, and new unintended consequences are generated" (p. 1004). Where the existing power asymmetry between the global core and periphery is concerned, humanitarian innovation can amplify rather than reduce the link between humanitarian practices and existing political dynamics (Jacobsen, 2015; Ticktin, 2011). As these ongoing automated projects at the UNHCR continue to collect and generate massive amounts of information about the forcibly displaced, it simultaneously subjects these vulnerable populations to data extractivism and digital capitalism (Aradau & Tazzioli, 2020; Madianou, 2022; Magalhães & Couldry, 2021). At a time when technology is changing at greater pace than practical policy needed for effective regulation, the incorporation of opaque technological systems to already complex issues like migration management further complicates rights and responsibilities when it comes to their functioning and social implications (Chouliaraki & Georgiou, 2022; Madianou, 2019; Molnar & Gil, 2018). Why is it still important for the UNHCR to continue experimenting and scaling current innovation projects in the forced displacement ecosystem?

From Project Profile to Project Jetson, the UNHCR's innovation turn promises to revolutionize its humanitarian response in emergencies, effectively provide assistance, and protect refugees and other forcibly displaced populations. Citing a human-centered approach in their work and their responsibilities to use existing data-driven solutions to address complex operational challenges (Hernandez & Roberts, 2020; *Innovation at the UNHCR*, 2019), the innovation team at the UNHCR uses "the promise of better care and safety as a justification" (Baykurt & Lyamuya, 2023, p. 6) for ongoing experimentation with big data, predictive analytics, and machine learning in sites of forced displacements while discursively distinguishing their work from data capitalism (Couldry & Mejias, 2019; Madianou, 2019; Magalhães & Couldry, 2021). By examining the contours and complexities of innovation at the UNHCR, I conclude that the establishment of

the Innovation Service at the UNHCR enables the agency to internally experiment with novel sociotechnical systems while also reinventing its collaborative undertakings with public and private stakeholders to meet its humanitarian goals effectively.

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