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Identity at the margins: data justice and refugee experiences with digital identity systems in Lebanon, Jordan, and Uganda

Emrys Schoemaker[a], Dina Baslan[b], Bryan Pon[a] and Nicola Dell[c]

[a]Caribou Digital, Farnham, UK; [b]Independent Consultant, Amman, Jordan; [c]The Jacobs Institute, Cornell Tech, New York, NY, USA

ABSTRACT

This paper examines refugees' experiences with and perspectives on the digital identity systems used by humanitarian organizations to collect, manage, and share their personal data. Through a qualitative study with 198 refugees in Lebanon, Jordan, and Uganda, we show how existing humanitarian identity systems present numerous challenges for refugees. For example, we find that refugees have little to no knowledge of the institutional systems and processes through which their personal data are managed and used. In addition, refugees are typically not able to exercise agency with regard to data that are collected about them (e.g. given choices about the data collected). At the same time, we show how refugees make active efforts to negotiate the various identities available to them, consciously weighing the benefits and constraints associated with different statuses to maximize their access to services, eligibility for employment, and spatial mobility. We engage with Taylor's lens of data justice to make sense of our findings and conclude by highlighting the potential of feminist science and technology study frameworks to further develop theories of data justice that can support analysis of identification systems that serve the interests of the most vulnerable.

KEYWORDS

Refugees; identity; displaced populations; data justice; feminism

1. Introduction

Humanitarian organizations that provide services to refugees across the world are embracing increasingly sophisticated digital systems for managing the identities and personal data of the beneficiaries they serve. These digital identity management systems, like many other information management systems, have the potential to provide organizations with simplified reporting, reduction in fraud, improved service delivery, and increased convenience for both organizations and refugees (Muralidharan et al., 2016).

There is growing evidence that whilst the increasingly digitalized nature of registration and identification systems offers benefits, in the form of increased accuracy and error reduction (Muralidharan et al., 2016), and the more accurate allocation of resources (Saini et al., 2017), these systems also introduce challenges for individuals who use the system that can lead to exclusion, harm and injustice (Masiero & Das, 2019). As Masiero and Das (2019) show, the digitalization of welfare systems in India can lead to new harms that they characterize as 'data injustices' in the legal, design-related, and informational areas.

Identification systems, like other forms of datafication, are intrinsically powerful and sensitive topics and, given the vulnerable nature of the refugees being served, the complexities and risks

CONTACT Emrys Schoemaker emrys@cariboudigital.net Caribou Digital, 56 Echo Barn Ln, Wrecclesham, Farnham, UK
Silvia Masiero and Savita Bailur are the Associate Editors for this manuscript

associated with these large-scale systems are amplified. Navigating these complexities requires us to understand the experiences of the individuals that are subjected to these systems and balance the operational benefits with an empathetic assessment of how these systems impact individuals' privacy, dignity, and agency.

The concept of data justice, understood to mean 'fairness in the way people are made visible, represented and treated as a result of their production of digital data' (Taylor, 2017, p. 1), is a helpful framing of the impact that digital identification systems have on individuals' lives. The concept of data justice has been used to explore the issue of open data (Johnson, 2014), of broader ecosystems of institutions, markets, legal systems and public debate (Heeks & Renken, 2018), of the relationship between surveillance capitalism and citizenship (Dencik et al., 2016) and the datafication of public welfare programmes (Masiero & Das, 2019). As Taylor (2017) notes these distinct approaches are linked through their shared focus on politics and power, and their formulation of social justice.

This paper describes a qualitative study examining refugees' experiences with, and perspectives on, the digital identity systems that humanitarian organizations use to collect, manage, and share their personal data. We conducted semi-structured interviews and focus groups with 198 refugees, in and out of camps, in Lebanon, Jordan, and Uganda in 2018. We describe the various digital identity systems that refugees encounter as they work to establish identities that grant them legal status and entitlement to services (e.g. food, shelter, health services). We also uncover many challenges that result as individuals struggle to navigate the systems that organizations use to collect their personal information and biometric data (e.g. fingerprints and iris scan).

For example, we show how individuals have little to no knowledge or visibility into the institutional processes through which their personal data are managed and shared, including which organizations have access to their data. This lack of transparency results in confusion, disappointment, and anxiety about the safety and privacy of their information. Despite these concerns, refugees are desperate for assistance and often have no choice but to provide all the information that organizations request.

In addition, refugees are rarely offered the opportunity to exercise agency with regards to data that is collected on them (e.g. given choices about what data is collected or how it is shared). Nevertheless, many refugees make active efforts to negotiate the various identities available to them, consciously weighing the benefits and constraints associated with different statuses (such as registered vs. unregistered) in efforts to maximize their access to services.

Moreover, despite acknowledging that they do not know the criteria that organizations use to assess their vulnerability and eligibility for assistance, we find that many refugees actively work to redefine their family structure in ways they perceive will maximize the services they receive, such as selectively registering only the woman and children. However, such actions can impact household power dynamics, since women registered as heads of households are given control over the family's resources (e.g. food and shelter) in communities where traditionally men are the decision-makers. We discuss how individual refugees are unable to negotiate flexibility in the nature of their identity or their eligibility for services. This further results in refugees striving to (re)define themselves in ways that better fit existing identity systems, especially if it may result in additional benefits.

We develop these findings to further understand the consequences of digital identification systems for refugees by drawing on Taylor (2017) lens of data justice. Taylor describes three pillars of data justice. The first pillar, visibility, deals both with privacy and representation, and we see how refugees both value privacy but struggle to exercise it in relation to the systems they interact with. Taylor's second pillar, digital (dis)engagement accommodates both the established information and communication for development (ICT4D) perspective that technology is broadly a force for development as well as emerging countervailing ideas that freedom can be found through disengaging (Gagliardone, 2014; Taylor & Broeders, 2015). We show how for some refugees there is greater opportunity and even a sense of security in not registering with identification systems. Taylor's third pillar is that of non-discrimination, which consists of two elements, namely the power to identify and challenge bias in data use, and the freedom not to be discriminated against. We show how refugees

have limited understanding of the systems they engage with and the way this operates, leading to fatalistic acceptance or enduring anxiety about security.

We discuss how challenges with existing identity management systems impact the broader ecologies in which they are deployed, such as how difficulties obtaining and renewing identities restrict refugees' mobility or access to basic services essential for survival. We also highlight important information and power asymmetries between refugees and the organizations tasked with advocating for them, with organizations possessing a significant amount of power over refugees, who are desperate and have no choice but to comply with any demands made of them by organizations. In light of these insights, we suggest a starting point for engaging refugees in the design of improved identity management systems, which may lead to benefits for both humanitarian organizations and refugees.

We conclude with reflections on the conceptualization of identity and its implications for analysis to support the furthering of data justice for refugees. We find that identification is always a 'relational' phenomenon, in contrast to individualistic accounts of identity. We show how feminist accounts of Science and Technology Studies (STS) can contribute to theorizing data justice in the context of digital identification systems for refugees by helping to reveal the relational nature of identity, the operation of power, and a space for individual agency and flourishing.

2. Related work

The concept of identity and its importance in the social, cultural, and historical lives of humans has been discussed at length in psychology and the social sciences (e.g.(Leary & Kowalski, 1990; Meeus et al., 1999; Phinney, 1990; Waterman, 1982; Whitley et al., 2014)), and has been shown to have direct relationships to social, cultural, and historical contexts (Baumeister & Muraven, 1996). Theoretically, 'identity' refers to social category, defined by membership rules and socially distinguishable features that a person takes a special pride in, or views as unchangeable but socially consequential (Fearon, 1999; Tajfel et al., 1979). The theoretical concept of identity has also been critiqued for being 'asked to do too much' (Brubaker & Cooper, 2000) and as a result may have limited analytic utility. Brubaker and Cooper (2000) argue for more specificity and application of the concept, while Whitley et al. (2014) argue for greater attention to the interplay between the distinct phenomena of information systems, identification, and identity. In our work, we focus on the identification of individuals as refugees by humanitarian organizations and institutions, distinct from social psychology work on social and inter-group identification (see Brubaker & Cooper, 2000; Tajfel et al., 1979) whilst remaining sensitive to the broader concept of identity as a theoretical social category.

Given the strong influence identity has in defining social and cultural milieus, it becomes especially crucial to study identity in the context of refugees and displaced populations. Although there have been abstract mentions in the literature of the linkage between identity and refugees (Shami, 1996; Smeekes et al., 2017), there is little literature available that discusses the changing nature of refugee identities in the digital age. With the global proliferation of digital technologies, digital identity is now fundamental in defining a refugee's status, especially in camps. Although prior research has explored digital identity in general (e.g.(Allison et al., 2005; Martin & Segovia, 2018; Nach & Lejeune, 2009)), very few empirical studies focus on digital identities in the context of refugees.

Connection and community-building within refugee communities has also received recent attention in the literature. For example, Almohamed and Vyas (2016a) use ethnographic research to identify themes around social isolation, cultural backdrops, and the role of technology in the lives of refugees and asylum seekers. Aal et al. (2016) expose challenges with physical and social infrastructure through analyzing a refugee camp computer club, while Schmitt et al. (2016) examined community-level physical access divides in camps. Xu et al. (2015) conducted a study to promote participatory community building via mapping technologies, and further discussed data-driven community development in follow-up work (Xu & Maitland, 2017).

Other research highlights vulnerabilities associated with resettlement (Almohamed & Vyas, 2016b) and the role of digital technologies in helping refugees to integrate into new environments and

attain independence (Baranoff et al., 2015; Irani et al., 2018). In addition, work has examined the security threats and vulnerabilities associated with refugees in the digital tech space (Bustamante Duarte et al., 2018; Coles-Kemp et al., 2018), a topic that our work touches on as well. A variety of strategies have also been used to help refugees rebuild social capital and a sense of community in displaced environments (Almohamed et al., 2017), including community radio (Kazakos et al., 2016), co-located social media platforms to help refugees find their voices (Xu et al., 2017), human-in-the-loop messaging to reduce language barriers (Brown & Grinter, 2016), leveraging social ties to bridge the social and economic divide by forming computer clubs in Palestinian camps (Yerousis et al., 2015), and utilizing the importance of food in camps to develop social capital (Fisher et al., 2017). This research is orthogonal to our work, which focuses more on how refugees interact with organizations and the digital systems that organizations use to make refugees legible to the organization.

Another set of papers has worked to understand refugees' access to or usage of health services in camps. Talhouk et al. (2016) used focus groups to identify contextual and cultural factors that can inform the design of digital technologies to support refugee antenatal care. Carrying this forward, Talhouk et al. (2017) then explored the concept of refugee-led community radio shows to deliver health information and discussed community dynamics in utilizing technology for health. Focusing more directly on technology access and use, research has explored refugees' use of the Internet and mobile communication devices, both in adult populations (Xu & Maitland, 2016) and with youth (Yafi et al., 2018). Yafi and Fisher (2018) studied how Syrian youth at the Za'atari Camp in Jordan use information and mobile technologies in their daily lives. Fisher et al. (2016) conducted participatory design workshops at a Syrian refugee camp in Jordan to learn how youth help others to use technology. Stickel et al. (2015) worked with children in Palestinian refugee camps and explored issues around digital fabrication in developmental and educational settings.

Our paper contributes to this literature with a qualitative study of refugees experiences with, and perspectives on, the digital systems that humanitarian service providers use to make people legible to their organizations. We highlight the challenges that refugees navigate as they struggle to maximize the services they are entitled to, discussing how information and power asymmetries negatively impact refugees' ability to exercise agency and control over their personal information and identities. We find Taylor's lens of data justice particularly helpful in assessing the outcomes of digital identity platforms for refugees because it is oriented around three pillars that reflect elements shaping refugee experiences (Taylor, 2017). The first pillar, visibility, deals both with privacy and representation, Taylor's second pillar, digital (dis)engagement, reflects the underlying sense in the humanitarian community that technology can enable better outcomes but also accommodates the possibility that greater opportunity and even a sense of security may come from not registering with identification systems. The third pillar in Taylor's framework is non-discrimination, which consists of two elements, namely the power to identify and challenge bias in data use, and the freedom not to be discriminated against.

3. Research methods

3.1. Research sites

We conducted our study with 198 refugees in Lebanon, Jordan and Uganda, in and out of camps, in 2018. Our methods were reviewed and approved by Cornell University's IRB, the Ugandan Office of the Prime Minister, and Save the Children. We chose Lebanon and Jordan because they have both received a large influx of refugees as people have fled Syria, yet they offer differences in terms of identity systems in use. As of December 2017, Lebanon had 1,018,057 registered refugees and asylum seekers, predominantly in the Bekaa Valley but also in urban and peri-urban areas around Beirut (UNHCR, 2018e). We spoke with Syrian refugees and Palestinian refugees from Syria in the Bekaa Valley and in central and peri-urban Beirut. Lebanon is distinct because most refugees live in informal tented settlements, and the registration and data management systems have reflected this.

In 2018, Jordan had the second highest share of refugees compared to its population in the world, 89 refugees per 1,000 inhabitants (UNHCR, 2018d). Although the majority of Syrian refugees in Jordan live in urban areas, 126,490 refugees live in camps, with Zaatari and Azraq, the two largest, hosting 78,554 and 41,089, respectively (UNHCR, 2018h). We spoke with Syrian refugees in both these camps and in the capital, Amman, in February 2018. Jordan is distinct for its highly developed camps and the use of advanced biometric technologies.

As of 28 February 2018, there were 1,444,873 refugees and asylum seekers in Uganda, with 21% in Yumbe, the location of Bidi Bidi camp (UNHCR, 2018i). We spoke with South Sudanese refugees in Bidi Bidi in March 2018. Uganda is distinct because the government, through its Office of the Prime Minister (OPM) (Uganda Office of the Prime Minister, 2018), has taken the lead in registering and managing refugee data. It also has one of the most progressive policies towards refugees, granting them legal recognition and giving each refugee household ownership of a small parcel of land.

3.2. Recruitment

Participants were recruited through a combination of invitation by partner organizations, personal networks, and snowball sampling (Goodman, 1961). Save the Children, an international NGO, provided logistical and initial recruitment support, inviting beneficiaries to participate. We also drew on our research assistants' personal networks to access community-based organizations active in supporting refugees. At all sites, we used snowball sampling, (Goodman, 1961) asking participants to introduce us to people they knew.

3.3. Qualitative methods

We used a combination of semi-structured interviews and focus groups to engage with participants (see Table 1). Our question guides were structured around topics identified in the literature, stakeholder interviews, and pilot research. We sought an understanding of: refugees' experiences using identity credentials before displacement; their first experience of registration and using new identity credentials; using refugee credentials to obtain services; everyday experiences of proving identity; and managing different identity credentials. We also probed participants' understanding of how organizations manage their data, and the barriers and workarounds used to maximize access to services.

Interviews and focus groups took place in a mix of locations, including NGO offices in camps, homes, food distribution points, and shops. Most interviews and focus groups were conducted in private without the presence of the recruiting organization or partner organization in order to mitigate respondent bias when reporting on the conduct of the recruiting organization. We began by explaining the purpose of our research and obtaining the participant's consent. Sessions lasted approximately one hour and were conducted in the participant's choice of English or Arabic. The majority of participants in Lebanon and Jordan (approx. 80%) chose Arabic, while participants in Uganda were more evenly split between both English and Arabic. Sessions were audio recorded with permission from participants. In a few cases, participants declined to be audio recorded and so instead we took detailed handwritten notes. Participants were not compensated.

Table 1. Summary of participants and research methods.

	All	Lebanon	Jordan	Uganda
Total participants	198	65	58	75
Men	86	27	16	43
Women	112	38	42	32
Interviews	39	9	4	26
Focus groups	23	9	8	6

3.4. Participants

Table 1 provides some demographic information about our participants at each research site. In total, we spoke with 198 refugees: 86 men and 112 women. Almost all of our participants had access to a mobile phone, either owning their own device or sharing a device with family members and/or friends. The most common applications that participants reported using were Facebook and WhatsApp, which participants ubiquitously described using to keep in contact with family members or friends, both in the host country and in other countries (e.g. back in their home countries). In addition, mobile money applications were commonly mentioned as being useful for sending and receiving money.

3.5. Data analysis

Audio recordings were professionally translated into English (if necessary) and transcribed. We then analyzed the transcripts and our copious field notes thematically (Braun & Clarke, 2006), beginning with a comprehensive reading of the transcripts during which we identified initial codes. We performed multiple passes over the data to iteratively refine codes and ensure they accurately represented the data. Coding was performed by two research assistants with input, supervision, and discussion with the broader group after each iteration. Our final set of 57 codes were formalized in a codebook that was used to perform a detailed analysis of all transcripts. Examples of codes include *biometric data*, *UN card renewal*, and *political persecution*. We clustered related codes into high-level themes that represent our prominent findings. Examples of themes include *privacy concerns*, *challenges with registration*, and *lack of transparency*. We emphasize that the nature of our data is qualitative, not quantitative, so we do not report on raw numbers of participants who made certain statements in our data and analysis.

4. Establishing different identities

When individuals flee their own country and enter that of a host government, they also enter a network of organizations and systems that are part of the humanitarian response. The organizations and systems that make up the humanitarian response labels and classifies people in order to make them legible to the systems employed by organizations to manage the provision of services. The labels and classifications are used to organize and ration the provision of scarce resources, according to diverse and complex criteria. Some categories, such as specific nationalities, genders or ages are categorized as priorities for the provision of services, and different organizations have different priorities. For example, UNHCR, the UN's Refugee Agency, serves all refugees and has a legal mandate to recognize refugee status. By contrast, UNICEF, the United Nations Children's Fund, prioritizes young people, while the priorities of many non-governmental organizations (NGOs) are set by donors.

As organizations interact with refugees, they create records and issue credentials in order to identify and authenticate that people are who they say they are. Through the journey of interacting with these diverse organizations and services, individual refugees collect many different identity credentials, from the UNHCR registration document that identifies them as a recognized refugee to temporary project-related credentials issued by NGOs. Refugees frequently end up being identified by multiple organizations, possessing and managing multiple identity credentials, with different identities holding different functions and levels of importance in the refugees' lives. Common to many of these systems that record an individual's data is that they are increasingly digital, with biometric and biographical data recorded and stored in computerized systems. We first describe the registration systems used at our research sites, focusing on the systems that issue refugee credentials, though acknowledging that refugees are also registered and identified by multiple other credentials. Then we discuss refugees' different identity credentials and the processes for obtaining them before analyzing the challenges refugees face managing these credentials.

4.1. Refugee registration systems

We begin by explaining the different registration systems developed and used by UNHCR, which were the most prevalent in our study. UNHCR defines registration as 'the process of recording, verifying and updating information on persons of concern to UNHCR' (UNHCR, 2018c). UNHCR has three levels of registration: Level 1, which records basic household information and is used to establish a response plan. Level 2 provides the basis for most basic planning and monitoring activities and is the beginning of continuous registration. The data collected at Level 2 includes name; sex; date of birth; current location; place of origin (address); date of arrival; special protection and assistance needs; marital status; citizenship; education level; occupation/skills; religion; ethnic origin (tribes/clans/sub-clans); photograph; biometric data if needed and crucially, permission to share information with other parties. However, neither level 1 or level 2 data is sufficient to meet determine individual refugee status, so for level 3 registration the following data is collected: names of spouse(s); name of father, mother, and spouse; additional personal names; names of all children; place of birth; existing personal documents; occupational categories; languages; documentation issued locally; voluntary repatriation status; resettlement case status; local settlement status; specific events related to individuals and to the groups to which they belong (household/family/case). Whilst this information is sufficient for most needs, continuous registration means that ongoing information collection is able to record new such as the birth of a new child, hospital visits, etc.

UNHCR's identity management system is the Population Registration and Identity Management Eco-System (PRIMES) (UNHCR, 2018f) trust and service platform. This provides a single entry point for all digital interaction between UNHCR (and partners) and individuals who are registered. The PRIMES platform includes all interoperable registration, identity management, and caseload management tools and applications, and enables a centralized analytics platform, the PRIMES Dataport, which is accessed through a secure data interface (UNHCR, 2020). PRIMES enables the following services: registration (biographic and biometric) and certification; case-management (including the principal protection aspects: refugee status determination, re-settlement, repatriation, legal and physical protection, child protection, sexual and gender-based violence, and others; assistance (cash and in-kind) and data management, including reporting and sharing.

PRIMES emerged as the umbrella platform from a series of registration tools, such as the Field Based Registration System (FBARS) and the Registration of Individual Cases System (RICS) that were developed by specific UNHCR Field Offices to meet the need of specific response. These tools were analog, localized and only collected basic biodata, and it was only in 2000 that UNHCR introduced the Electronic Resettlement Information Submissions System (ERISS) that supported electronic file submission (Deloitte and Touche, UNHCR staff. "Study for scoping of Project PROFILE." UNHCR, 2001). Importantly though, these were tools that supported institutional management, not the needs of refugees. It was only in the latter stages of the Kosovo crisis that UNHCR developed Project Profile, a system that contained individual refugee registration records and could issue credentials -- intended to support refugees who lacked identity documentation (Helen Deresky, Elizabeth Christopher. International Management: Managing Cultural Diversity. 2012). These tools evolved into the primary data collection and management platform called ProGres (UNHCR, 2018g), that was developed in 2002 with support from Microsoft, and enables the collection and management of data used in the determination of legal status Microsoft (n.d.). Once status had been granted, proGres issues identification cards, to record addresses and voluntary repatriation forms and to identify individuals with special needs.

ProGres, now on Version 4, is not the only digital identity system that is used by UNHCR. In 2015, a Biometric Identity Management System (BIMS) was developed in partnership with Accenture which aims to capture and store all fingerprints and iris scans from refugees (UNHCR, 2018a). While biometric data are now supported in the ProGres registration system, the data entry process is usually conducted during a face-to-face interview and data is entered manually. ProGres itself has also been updated, to include a suite of modular applications, including BIMS, that can be deployed

in a configuration that is appropriate to the needs of a specific context. These applications include Rapid Application (RApp), which allows offline data collection of refugees (later uploaded to proGres); CashAssist, which enables registered refugees to receive cash assistance; and Global Distribution Tool (GDT), which allows registered refugees to receive in-kind assistance (e.g.food).

In addition to the UNHCR, there are many other humanitarian organizations that use systems to manage the collection and management of personal data. Commonly used systems include Last Mile Mobile Solutions, developed by World Vision International (2020) and Segovia (2020), developed by the founders of Give Directly and Red Rose. Although these systems are widely used in humanitarian and refugee response, the lack of shared standards that could enable interopability or data exchange has created a complex context of data management systems and practices (Currion et al., 2018). Even with these systems, challenges such as the need for swift response and limited connectivity mean that data collection and management often takes place using unsecured tools such as online and offline spreadsheets, posing risks to data protection and privacy.

Importantly, there are commonalities and differences in the registration and data management systems used across our three different research contexts. Although UNHCR's systems are uniform, the specific constellation of PRIMES systems in use varies according to context. In Lebanon, in addition to the standard registration on ProGres, refugees were also signed up to a Mastercard based common cash delivery platform called The One Card system, through which UN agencies and NGOs could distribute cash benefits (Mastercard, 2020). In Jordan, refugees in camps would authenticate their identity through iris recognition, part of UNHCR's partnership with Irisguard, whilst those outside would use branded Mastercard payment cards. For both, the identification was closed loop, in that refugee credentials were not accepted by non-humanitarian service providers as sufficient to provide financial or other services.

In Uganda, initial registration was conducted by the Ugandan government using the Refugee Information Management System (RIMS) that issued a refugee card as a form of identification, which was recognized as sufficient to issue a SIM card and open a bank account (UNHCR, 2019). There was also a UNHCR and World Food Programme led re-verification exercise that collected refugee data in PRIMES being conducted at the time of research.

4.2. Refugee experiences registering with UNHCR

Our findings show that refugees register with UNHCR with and other organizations for two primary reasons: to obtain legal status as a refugee and by doing so, to be able to access critical services. Thus, the most important identity credential for most refugees is a UNHCR identity document, which typically consists of a physical ID card or piece of paper with a barcode. This credential is obtained through official registration with UNHCR and provides legal recognition of refugee status. It is a material symbol of the refugee's legal status and entitlement to benefits and is critically important for establishing identity and accessing services from multiple organizations. For example, the World Food Program and other NGOs that provide services on behalf of UNHCR, distribute assistance to refugees based on their registration status with UNHCR. As such, a person's ability to obtain food, shelter, health, and other essential services is strongly tied to their UNHCR registration card. A woman refugee in Uganda explained to us the importance of the UNHCR registration card for refugees in Uganda:

> The [UNHCR] card is the very important one. At the distribution centers its what they use to give you a ration card. Secondly, when you go to the hospital, and thirdly it shows that you are a refugee. (Focus group, Uganda, Woman)

As this quote suggests, the UNHCR registration card is also important because it confirms the refugee's right to be in the host country, which is particularly important in countries, such as Lebanon and Jordan, that limit refugees mobility, access to employment, or state services. Many participants said that their UN registration document was very important to carry with them and how it was often

inspected by security forces who stop refugees and demand they prove their status and identity. A woman refugee in Lebanon who had fled from Syria described her experiences needing to carry identity documents with her at all times:

> In Syria we never had to carry any documents with us. Right now, in Lebanon, the situation is very different. Having to carry IDs at all times causes stress because if the military catches us without IDs, we could be in trouble. (P8, Lebanon, Woman).

Interestingly, our analysis revealed that this legal status can impact men and women differently, with women often possessing greater mobility than men because security forces stop and interrogate men more than women. A male refugee in Lebanon explained how the military tended to only interrogate men and not women:

> When the military come to the house, they don't talk to women, only men. (Focus group, Lebanon, Man)

We learned from participants at all three research sites that registration with UNHCR takes place in dedicated centers equipped with private interview spaces and biometric scanning equipment. Each refugee participates in an in-person interview that can take up to a few hours. If the refugee has a family, the whole family is registered as a single unit, with one adult designated as head of the household. During registration, participants said that they were asked many personal questions about life in their home country, reasons for becoming a refugee, experiences getting to the camp, etc. A male refugee in Jordan who had fled from Syria described:

> [The UNHCR] asks about the experience you had, how you were in Syria, what you used to do, and what is the reason that made you leave to here for refuge, and these things. We gave them a summary, how we arrived, and how we arrived to them. (Focus group, Jordan, Man)

Many of these questions aim to enable the UNHCR and other aid organizations to perform vulnerability assessments, in which refugees who are deemed to be more vulnerable or high-risk may receive additional assistance. These vulnerability assessments are based on complex criteria that are largely opaque to refugees, who are often nervous about the interview because they fear making mistakes and failing to get access to much needed services, a challenge we discuss in detail in Section 5.3. The data collected about the family are usually stored in proGres (UNHCR, 2018g), the identity management software used by the UNHCR.

In addition to collecting the refugee's biographical information, the UN representative also records their biometric data, including fingerprints, iris scans, and facial images, which are typically stored in the UNHCR's Biometric Identity Management System (BIMS) (UNHCR, 2018a), which integrates with proGres. In Jordan, biometric data were collected by Irisguard, a private biometrics company that provides their technology to the humanitarian sector. When we asked participants for their opinions regarding biometric data collection, we discovered that most refugees view the process positively since it allows organizations to control the distribution of services and curb fraud. A woman refugee in Jordan described some of the benefits that she perceived were provided by the biometric system:

> My personal take on the procedure is very positive, because there are thousands and thousands of refugees here, so you need a solid identification system to identify them all accurately. So in terms of documenting the identities in the computer system, the eye scan is the most reliable …simply because it is the one thing that you cannot forge. Any documents can be forged, the eye scan no. (P34, Jordan, Woman)

We were generally surprised by the positive views that our participants expressed regarding biometric data collection systems. We note that our participants positive perceptions of the biometric systems may have been influenced by their past experiences, in which non-biometric aid distribution systems were rife with fraud and corruption, preventing many refugees from obtaining the aid they were entitled to. Although participants at all research sites shared similar positive views regarding the biometric systems, Ugandan participants were especially cognizant of the security provided by biometric systems, in part because Uganda had recently experienced a major fraud scandal in their aid

distribution systems (The New Humanitarian, 2018). A male refugee in Uganda explained how the biometric system could help to curb fraud in food distribution systems there:

> Associating [food] distribution with [registration], they should use biometrics because there is corruption. They should use biometrics because it builds confidence. (P46, Uganda, Man)

Nevertheless, we were surprised that we did not hear more concerns regarding the sensitive nature of biometric data being collected from refugees by humanitarian organizations. However, although participants generally viewed the linking of services like food distribution to people's biometric data as a positive step, biometric verification was not able to solve all of the fraud or corruption issues that our participants described. For example, our data revealed how refugees believe some people who are responsible for distributing food to communities steal a portion of the food for themselves. A woman in Uganda who had experienced theft of her food allowance said,

> The ones who offload [the food trucks]. They are just taking [it] and we are left with little food … now that's a big problem … they take two kilos from each person's 12 kilograms [of food]. (P100, Uganda, Woman)

Finally, although the vast majority of our participants viewed biometric data collection as a positive step, a small number did express concerns about the biometric systems. These concerns most often stemmed from rumors and perceptions rather than issues like data sensitivity. For example, a woman in Uganda described how she was afraid of the biometric data collection system, telling us:

> I heard stories that the eye scanner might steal my eyes, is that true? Many people are afraid of it. (P170, Uganda, Woman)

4.3. Refugee experiences registering with other organizations

In addition to UNHCR, participants at all three research sites described how they also register with a wide range of other organizations in an effort to access desperately needed services. These services are often refugees only source of support, particularly in countries refugees have limited access to labor markets or state welfare services. A male refugee in Lebanon described how only people who had entered the country illegally and who were therefore unable to register with the appropriate humanitarian organizations did not seek aid:

> Only people who are here illegally don't approach any NGOs for services, they live a very rough life in makeshift shelters, cold weather, no food or supplies. (Focus group, Lebanon, Man)

Some participants described how they registered with any organization that they came across, sometimes losing track of all the organizations that they registered with. A woman refugee in Lebanon described how she lost track of all the organizations she registered with:

> For me, I registered in so many organizations that I do not even remember any of their names. Whenever we found or heard of an organization we went and registered every time. (P184, Lebanon, Woman)

Although registering with multiple organizations required people to provide the same information over and over again, they said they did not mind the repetition if it led to assistance. A woman refugee in Uganda told us how she was prepared to repeat herself many times if it might result in aid:

> We don't get tired [when they ask the same questions over and over] because all we want is to get help. If help can come, no problem. (Focus group, Uganda, Woman)

However, our analysis showed that registering with so many organizations led to confusion and frustration among the refugees. In many cases, refugees were unable to associate specific services received with the organization responsible. They also frequently confused different organizations and did not understand how the organizations made decisions about who to help. A woman refugee in Lebanon described her frustration and disappointment when registering with humanitarian organizations (not the UNHCR) failed to yield anything:

> I registered with a Danish organization and received nothing, not even bed blankets. I registered and went through a whole process and when I thought I was finally getting something, they informed me that I did not make the grantee list. (P59, Lebanon, Woman)

As this quote suggests, refugees often lack knowledge or awareness of the assessment criteria used by organizations to apportion scarce resources, leading to disappointment and frustration when organizations who recorded their information failed to deliver any benefits. Nevertheless, many participants still registered with any organization that might offer assistance. A man in Lebanon described how he had seen many times how refugees were disappointed by organizations that collected data but failed to provide services, but how the refugees nevertheless continued to register with organizations out of desperation:

> At the beginning other NGOs showed up and registered refugees with the promise of assistance. Most of them didn't deliver on promises. Refugees lost trust in them and they have suspicions of corruption in the humanitarian system, where they think NGOs take [refugee] names for their numbers and funding but don't deliver to refugees. However, they still register with anyone who offers help, like a drowning person hanging to a straw in the ocean. (Focus group, Lebanon, Man)

5. Challenges managing identities

Having described the different registration systems in use and types of identities that refugees create as they try to obtain assistance from humanitarian organizations, we now discuss additional challenges that our analysis surfaced as refugees work to establish and manage these credentials.

5.1. Registration is time consuming and laborious

A big issue for many participants was that the process of registering with organizations was time-consuming and laborious – though notably in Jordan advanced systems had reduced this to days. Many participants described that it could take months or even years to register with the UNHCR, with delays arising due to a variety of reasons. For example,in Lebanon, obtaining refugee status was complicated by the host government's restrictions around the formal registration of new refugees, and the waiting time before refugees could register ranged from months to years. This can result, as it does in Lebanon, in what UNHCR terms 'de-facto' refugees – people who are not legally recognized as refugees but who UNHCR serves as though they were, providing the same services and support.

To overcome the long waiting times before registering, some participants described how they used connections at the UN to manipulate the waiting times for appointments. One male participant in Lebanon who had connections at the UN admitted how he manipulated the appointment waiting times:

> I would go to the UN, I made an appointment. Of course they gave me one in nine months, and honestly, I pulled some strings and I made the appointment earlier. I know someone who works [at the UN], and he made it sooner … It was in September, he rescheduled it to April. Five months early. (P182, Lebanon, Man)

In Uganda, participants described the difficulties of waiting outside in long lines for days trying to register. A woman refugee in Uganda described her experiences waiting to be registered by UNHCR:

> We would stay from morning to sunset waiting to be registered, even the children suffered from the sun. There was no water to drink. People were suffering … some people were insulting us. They said that we Sudanese were dirty. (P45, Uganda, Woman)

As this quote suggests, many refugees reported that they were often shouted at or humiliated by people who lived in the host country. However, in these situations, they felt that they had no choice but to endure the humiliation since they badly needed the assistance that was being provided. A male refugee in Uganda described how he reacted to being insulted by people in his host country:

> You just obey because you are from a foreign land. You humble yourself because you need the food. (P69, Uganda, Male)

Even after refugees reached the front of the line and began the UNHCR registration process, obtaining an identity card often took multiple days, in part because of the overwhelming number of people who needed to be registered. A woman in Uganda described how it took her days to register with the UNHCR there:

> The process was very laborious and long. You could not just walk into the interview room. The numbers of people were overwhelming. It took a minimum of three days. They interview you today, take your photo the next day … And on the third day, you go and pick up your card. (P58, Uganda, Woman)

5.2. Renewing or changing data is difficult

Our participants also faced challenges changing or renewing their information. In Lebanon and Jordan, the UNHCR requires all refugees to renew their registration periodically, but many participants said that it was difficult or impossible to do so. A woman in Lebanon described how needing to renew her UN registration there caused her a great deal of stress:

> For us, it is the renewal issue that is a nightmare …and it is stressing us all. We need to renew the UN papers [every] one or two years, and in many cases we are not able to do that. (P164, Lebanon, Woman)

Once again, participants described how they were only able to obtain an appointment with the UNHCR to renew their registration months or years in the future. Being unable to renew registration documents caused significant problems for our participants, especially men, who may be stopped by security forces and found to have expired papers. One man in Lebanon described being taken away and interrogated by police for several days when they discovered that his card had expired. He told us:

> [The policeman] looked at me and said your card has expired. I said I knew it was, but I was working on renewing it. They told me to get in the car. I got in with them and they took me for three days to the intelligence agency. (Focus group, Lebanon, Man)

Our participants also discussed how UN and other organization workers were in a position of power over refugees, which made the refugees afraid to follow-up too frequently on the status of their case since, if they annoyed the UN workers, they could use their power to discriminate against or make the refugees' lives more difficult. A male participant in Jordan described how he was afraid that if he made too many visits to the UN, the UN officer would reject his request:

> Maybe if I bother [the UN officer] with many visits and annoy him, he can just strike out my name. (P124, Jordan, Man)

In addition to difficulties renewing UNHCR identity documents, our participants described how changes in personal status, such as getting married, created challenges because updating their registration is difficult and takes a long time. A male participant in Lebanon described some of the challenges he faced when he wanted to get married, which would necessitate updating his records with the UN:

> Transferring something from one file to the next is a hassle. Like marriage. I am in my parents file. I want to marry a girl who is in her parents file. For us to have our own file, it is very hard. Tomorrow … try calling the UN. Ask them to give you an appointment and say you want to review or edit my file … they will say it would take a year. (P82, Lebanon, Man)

Similarly, trying to record the birth of a new child requires refugees to navigate many different bureaucratic systems to register the birth before being able to try and add the child's information to their UNHCR file. A participant in Lebanon described for us the process of registering a new birth there:

> Newborns have to be added to the [family's] UNHCR file. A birth certificate is issued from hospital. This paper is certified from mukhtar [town chief] who gives them the new official birth certificate. Then they go to the

> municipality to get it certified and registered in the system. Then they take that to UNHCR to add children to their file. It's very difficult to communicate with UNHCR. (Focus group participant, Lebanon, Man)

5.3. Identity systems lack transparency

Another major challenge that our analysis surfaced is how, from the refugees' perspectives, existing identity systems suffer from a severe lack of transparency, including when their data are collected, updated, used, and shared. Many participants explained that, when asking detailed and intrusive personal questions during registration processes, representatives from various organizations (including the UNHCR) often did not explain why they needed all this information or how it would be used, despite humanitarian organizations commitment to 'informed consent' Hugman et al. (2011). One reason for this lack of explanation was due to workers at registration centers being overwhelmed by the number of refugees. A male participant in Uganda described how when he was registering with UNHCR, he was not given the time to ask questions about the process or the need for data collection:

> They did not explain [why they need this information]. They were also asking under pressure because the population was too big. That did not give us time to ask. (P46, Uganda, Man)

Despite not understanding why their personal data were being collected, how it would be used, or how it would result in services that help them, our participants explained that they really did not have any choice but to provide the information that organizations requested from them. A male participant in Uganda explained how doing anything other than what was asked of him would only invite problems and more suffering:

> You as a refugee, any information … that is going to take place, you cannot say that you don't want to. You just humble yourself and do it. If you don't want to, that means that you are bringing suffering upon yourself. (P31, Uganda, Man)

In addition to being required to provide all information requested from them without understanding how it would be used, our participants discussed how the flow of information occurs in only one direction: they provide information to organizations but are unable to get information back from organizations. Many participants said their attempts to contact organizations after registering with them were unsuccessful. For example, a participant in Lebanon who was having difficulty registering her daughter in school due to lack of documentation said she was told to call the UNHCR 'hotline', but this line was never answered. Other participants faced similar challenges trying to renew their UNHCR registration. A man in Lebanon who had tried many times to call the UNHCR to renew his registration told us:

> I went to renew [my registration] and they gave me a number to call. I called the number, and they said your card is not eligible. (P47, Lebanon, Man)

In the absence of official explanations for why organizations need certain pieces of information, refugees often came up with their own explanations. For example, although a refugee's biometric data is primarily collected to verify their identity when receiving services, one woman participant in Uganda perceived this data would be used to determine her ethnicity and therefore her eligibility for refugee status:

> They did [the biometric scans] because they wanted to confirm if I was a Ugandan or Sudanese. I was scared about the whole process. (P121, Uganda, Woman)

Participants were also acutely aware that the information they provided was somehow linked to vulnerability assessments that organizations perform to determine who is eligible for assistance. The lack of transparency into how these vulnerability assessments are calculated meant that our participants usually did not understand an organization's criteria for distributing aid and, in many cases, believed that the process was unfair. A woman in Lebanon explained how her experiences suggested that the UN's system for distributing food aid in the country was not fair:

> We see [other] families with same aged children. Some of them even have cars and still they receive food aid. My brother has four young children, he receives nothing from the UN. (P185, Lebanon, Woman)

Several participants also perceived that only those who had 'wasta' or connections seemed to receive certain benefits or favors. For example, one male participant in Jordan described to us how, in his opinion, it was impossible to find employment unless you knew the right people:

> In short, it is only the people that have wasta … they get work and that is that. (P120, Jordan, Man)

Without official explanations of how vulnerability assessments are calculated, refugees formed their own perceptions of factors influencing their eligibility for assistance and then took steps to try and maximize their chances of receiving services. For example, many participants perceived that if a man registered as part of the household, the family would be denied aid. A male participant in Lebanon pointed out how, in his opinion, the UN tended to deny aid to people if there was a man who was registered as part of the family:

> During this time, the UN has been denying a lot of people the assistance they are providing. There are some people who see it that if there is a man, that they won't get assistance. (P182, Lebanon, Man)

As a result of this perception, we heard numerous stories of how men would choose to *not* register with UNHCR. Instead, the woman and children would register, with the woman listed as the head of the household. As one NGO employee who worked with refugees in Lebanon said:

> We met a lot of men whose wife and children are registered, and [he] did not register … the men with family, they don't want to register, but they register their family. (NGO employee, Lebanon, Woman)

Registering the woman as the head of the household gave her control over the assistance that the family received, such as food, shelter, and, in Uganda, ownership of the plot of land granted to each refugee household. However, this new dynamic of female-headed households also led to a range of unforeseen consequences, particularly since all our participants are from relatively patriarchal societies in which men are typically the decision-makers and control the family life. For example, one participant in Uganda, who also worked with an NGO that provided support to families and survivors of domestic violence, described how the women being the head of household issue is a big cause of domestic violence. Men want their position and control back, and may abuse women to get it. Further, we observed additional gender dynamics that arose when organizations, including UNHCR, assigned community leadership roles to legally-registered women. A man in Jordan described how he was not happy with the fact that the UN was assigning women as heads of households and neighborhoods:

> The UN … assigned a woman as the head of this neighborhood. So how are we expected to talk and deal with her … it bothers me. It's hard for me accept issues related to my life decided by not only a woman, but also a strange woman to me. (P124, Jordan, Man)

5.4. Data privacy and information sharing

We turn now to our participants feelings towards the privacy of their personal data and how it might be shared across organizations. Personal data privacy is particularly important for refugees, who have often fled persecution and fear being targeted if identified. In addition, the increasingly digital nature of identification systems means it is easier for organizations to share data than ever before.

As discussed in Section 4.3, many participants gave their personal information to any organization that might provide assistance. However, our analysis shows that the data sharing practices of organizations is opaque and most participants had no idea if or how organizations might share their personal information with other organizations. As one participant in Jordan put it, 'we never asked and we really do not know.'

When asked how much they cared if organizations shared their data with others, we received a range of answers. Some participants viewed data sharing among organizations as a positive and said that they did not mind if UNHCR shared their information since it might lead to additional opportunities for employment or assistance. Other participants said that they did not care about organizations sharing men's data, but did not think it was appropriate to share women's personal information. A male participant in Jordan told us how he would react if the UN shared women's data with other organizations:

> I would kill them if they share the women's photos and information. This demeans the women more than the men. (P124, Jordan, Man)

Some participants were so concerned about the potential consequences of data sharing that they avoided registering altogether. For example, a male Syrian refugee living with his family in a one-room apartment in Lebanon told us:

> Everybody was registering with the UN, but we did not. We were suspicious and scared. We don't know if the UN shares information with anyone, so that is why I did not share many things with them. (Focus group participant, Lebanon, Man)

Many participants felt that some of the information they provided was safe for organizations to share (e.g. their names or family size) but were concerned that sharing other kinds of information that they had been required to provide might lead to future political persecution or immigration problems. A male participant in Lebanon described how he was particularly concerned about the UNHCR sharing data that might compromise his ability to immigrate to other countries:

> The most important question [UNHCR] asked is: what area in Syria are you from, what is your political ideology, have you been a part of protests? … the problem is when they share the questions with the embassies for resettlement, they go back to the initial file. For example, if someone has participated in organizing protests or revolts, this affects his [immigration] case with some countries. (P82, Lebanon, Man)

Our participants' fear of political persecution extended beyond their concerns regarding information sharing among organizations and impacted their own sharing practices on social media. But, in contrast to the lack of knowledge or ability to manage and control the personal data held by humanitarian organizations, participants described how they actively manage personal privacy on social media. Some discussed how they avoided revealing political information, for example, by refraining from engaging in conversations online that touched on the topic of politics. A male participant in Uganda discussed how he refrained from talking about politics online for fear that it would cause him problems:

> Mostly when I am chatting [on Facebook], I ask [my friends] what is happening in their life, when can we meet again, future plans … For me the topic I don't talk about is politics. Because it is what caused us problems that made us refugees. I have fear of it. Sometimes I feel like if I engage in such talk, someone may just come and attack me. (P71, Uganda, Man)

Other participants described how they, and other refugees they knew, went even further by using fake names on any email accounts or social media profiles in an effort to hide their identities from the authorities. A man from Lebanon explained his efforts to try and remain unidentified online:

> My email is a pseudonym. My profile is a pseudonym. There is no real name … Because they will apprehend me, catch or arrest me immediately for anything. Most people [use fake names]. (P147, Lebanon, Man)

Yet another participant in Uganda believed that it did not matter if people hid their names or not, the government would be able to know about anything that the participant posted online, telling us:

> With Facebook there is no privacy. When you have your photos, whether you are hiding or not for security reasons, already they know. (P71, Uganda, Man)

In addition to concerns about online surveillance and tracking of social media activity by authorities, participants worried about physical inspection of their devices by security forces and

described how they tried to manage these risks. One participant in Lebanon explained how he had been stopped, interrogated, and beaten at security checkpoints. During these interrogations, he was glad he had left the smartphone he used behind, a conscious decision to prevent the police going through his phone, either identifying his contacts or using the content to further detain or harass him.

6. Discussion

6.1. Data justice

Our study of refugee experiences of registration systems provides an example of the little documented experiences of 'outlier' use cases of identification systems. In many policy discussions the use of digital identity for refugees is given as an example of how the refugee use case can be a proving ground to show how these new technologies can bring benefits to both institutions and individuals (Currion et al., 2018). We find that whilst they do indeed bring benefits to both, there are also outcomes that include injustices that digital identification cannot resolve, as well as injustices arising from the digital nature of the registration and management information systems.

UNHCR is committed to goals that align with the broad frame of data justice, particularly the element of political emancipation. The 1951 Refugee Convention provides that if host States are unable or unwilling to provide identity papers, UNHCR can, with the consent of the authorities of the asylum country, certify that a person is considered a refugee within UNHCR's mandate (1951 Convention Art. 25 and 1950 UNHCR Statute). Yet whilst this broader commitment provides the foundation for UNHCR registration and data management systems, we found that political emancipation was not always only a matter of whether technology translated these commitments successfully, but that often wider political contexts shaped the experience of refugees, regardless of whether the technology managed personal data in ways that afforded political emancipation and justice. Neither Lebanon nor Jordan are signatories to the Refugee Convention, and host refugees at their discretion. As a result of this, in most cases, UNHCR has to abide by host country decisions, including ones that constrain their ability to deliver on their commitments. In Lebanon, for example, the government had proscribed registered refugees from working and restricted mobility thus limiting their ability to achieve political and economic freedom. The achievement of justice for the most vulnerable requires broader attention than simply to the technologies to which they are subjected. The lens of data justice must be wide enough to consider the broader context in which the most vulnerable experience injustice.

We now draw on our analysis to explore what refugees' experiences of registration systems tell us about the outcome of these systems using Taylor (2017) theory of data justice. Taylor's first pillar in her data justice framework, *visibility*, deals both with privacy and representation, including issues around informational privacy at the margins (Arora, 2016; Raymond, 2017). We found that some refugees' fears of highly sensitive personal information being shared without their knowledge or consent was so great that they chose not to register with UNHCR. The fear of privacy abuse and lack of protection over personal data was linked to fears that unwanted visibility would lead to further persecution. Indeed, the complexity of the digital system, and lack of clear means to track data flows, heightens this fear of injustice, and leads to an immediate injustice – the forced choice between privacy protection and obtaining legal recognition as a refugee. We also found that the universal design of the registration systems pressures individuals to submit to an identity that is not of their choosing but that makes them legible to the institutions providing services they desperately need. A lack of agency and representation in system design results in the injustice of submitting to identification that may not represent a self-asserted identity. This highlights the importance of examining individual relations with not just systems and technologies, but also the relations with institutions.

Taylor's second element, *engagement*, describes the enabling outcomes from engaging with technology but also, critically from disengaging with technology, and proposes addressing power relations through a post-colonial framework that positions individuals as subalterns (Spivak & Said,

1988) in relation to data processing institutions, as they have no control or agency over how their data is used. We find that the registration systems that refugees interact with have not prioritized their participation in either design or implementation, leading to injustices such as inequitable allocation of entitlements because the amendment of registries is so difficult. The digital nature of registration systems, and the promise of technologies such as blockchain, have led to aspirations that individuals may have greater control over their digital identities (UNHCR, 2018b). Digital technologies have great potential for strengthening user access to registration systems, but this has not been prioritized. What we did observe is practices of disengagement, where individuals choose not to register, for example in order to access work opportunities. Whilst the universal design of registration systems may limit the pluralities of identity, the driver behind this choice is a function of the political context rather than an inherent affordance of digital technology.

Taylor's third pillar, *non-discrimination*, includes two elements, the power to identify and challenge bias in data use, and the freedom not to be discriminated against, both of which refer to the just processing and accounting of individuals. We found how inflexible systems designed with a universal user in mind impose an identity that demands conformity to this norm, regardless of context or uniqueness. This is most visible in the way identification systems structure social life, in both emancipating ways but also with unanticipated consequences, such as the restructuring of families in Uganda so that women are constituted as heads of the household, which was also identified as a big source of domestic violence. Here we might argue that even whilst discrimination or a universalizing design can lead to positive outcomes, design for justice should enable individual choice in the processes that lead to social restructuring and outcomes. Refugees should have opportunities to understand and engage with these systems, and the algorithms that govern them.

6.2. Feminism, justice and identification

Our findings also point towards conceptualizations of identity that require a coherent philosophical foundation from which to theorize an ethical framework for justice in a datafying world. We conceptualize identity as always relational, and outline a feminist post-humanist framework for data justice that accommodates this relationality as a contribution to theorizing data justice in the context of identification technologies.

6.2.1. Identity is relational

Our findings show how identity is always relational, emerging through an active process of identification. A conception of identity as relational reflects the way in which identity always emerges out of a process of identification, a process that is grounded in the relationship between identifier and identified. For example, the identity of a refugee emerges from the relationship between institutions and individuals in which institutional categories such as biodata, heads of household, and indexes of vulnerability, interact with and are negotiated by individuals with complex and dynamic personal attributes and biographies. Identification is the process of recognizing personal attributes and biographies and sorting them into categories that constitute the refugee identity.

Personal identity is also relational, emerging out of the social relations with others. In much of the social sciences, conceptualizations of identity have moved from individualistic, primordial accounts to instead considering the dynamic boundaries of ethnic groups (Barth, 1998), the imagination of shared national identities (Anderson, 2006) or the performance of gendered difference (Butler, 1990). In our research, we saw how individuals shared a common categorical identity as refugees, and were treated by UNHCR on that basis, making decisions such as placement based only on the categorical identity without taking into account other aspects of people's personal lives such as tribal membership. Yet social identities also persisted, and sometimes changed, as national identities also persisted in relation to others. As one respondent said, 'some people were insulting us. They said that we Sudanese were dirty.' (P45, Uganda, woman). In this example, it's clear to see how national identity emerges out of interaction. Social identities are not fixed categories defined by sovereign

attributes, but rather dynamic and always changing. As Gupta and Ferguson (1997) note, 'identity neither 'grows out' of rooted communities, nor is it a thing that can be possessed or owned by individual or collective social actors. It is a mobile, often unstable relation of difference.' As Butler (1990) has described, even the most biological markers of identity are performed and thus contingent and relational, not fixed or sovereign. Social identity is relational, and like all relations, dynamic and constantly changing. While institutional identification and social identity are distinct, the technical issues of identification and social issues of identity are inherently related and artificially separating them is unhelpful (Lyon, 2009). For example, a female Sudanese refugee in Uganda highlighted the relation between the two forms of identity, conflating biometric attributes with national identity, noting, 'They did [the biometric scans] because they wanted to confirm if I was a Ugandan or Sudanese. I was scared about the whole process' (P121, Uganda, Woman). A conception of identity as relational recognizes both institutional and social identity as active processes of identification, the negotiation of fixed categories and dynamic attributes in relationship between the identifier and identified.

This relational conception of identity also helps accommodates the particularities of mobility that refugees experience. King (1995) explores these ideas in relation to migrants' experiences, describing how 'the migrant's sense of place and of personal identity often involve a duality – "here" and "there", which is an important aspect of their lives' (1995: 29). In this sense, the experience of an ethnic identity tied to a place being carried to a place where a new identity – refugee – emerges carries commonality and differences. Registration systems that deliver justice must be able to accommodate these relational aspects of identity. As Butler (1990) and others emphasize, this relational conception of identity is also bound up with power. Foucault (1980, p. 93) conceives power, as 'a complex strategical (sic) situation in a particular society,' rather than an 'institution,' a 'structure,' or 'a certain strength we are endowed with,' reflects the nature of the relational idea of identity, and reflects the importance of a consideration of justice that accommodates this relational dimension.

6.2.2. Alternative directions for a relational account of data justice for identification technology

This relational conception of identity requires a coherent ethical framework for identification systems and data in order to ensure that these increasingly pervasive technologies support just outcomes, particularly for the most vulnerable. A feminist ethics of care provides a moral framework that departs from a universalist account to one grounded in voice and relationships, in the importance of everyone having a voice (Gilligan, 1993). As such, it creates a space for the voice and perspective of the most vulnerable and a framework oriented towards empathy and justice. A feminist ethics of care recognizes that humans are vulnerable, and that this attention to the ordinariness of vulnerability emphasizes the perspective and moral capacities of ordinary people (Laugier, 2013). This creates a normative framework in which universalist words such as 'good' or 'fairness' can be replaced by accounts of justice grounded in the experience and perspective of ordinary people (Diamond, 1991), including the most vulnerable, such as refugees. A feminist ethics grounded in a post-humanist notion of technology provides a coherent framework for the application of data justice, one that goes beyond approaches such as the Capabilities Approach (Nussbaum, 2003), which has a problematic individualistic frame, and a reliance on benevolent data controllers (Johnstone, 2007; Poolman, 2012).

A theory of data justice that can be applied to identification systems and data requires a framework that accommodates the relational notion of justice articulated in a feminist ethics of care. The field of STS offers important insights into the relational nature of phenomena that offers a challenge to the liberal conception of the sovereign individual, and the ways in which phenomena such as identification may emerge out of the relation of human and non-human actors. The work of post-humanist science and technology theorists such as Latour (2012), Haraway (2006) and Barad (1996) have helped focus on the relational nature of phenomena, including of relations between humans and non-human actors. Although the main field of STS has not paid a great deal of attention to identity and subjectivity (Wajcman, 2004), feminist theorists such as Barad (1996) and Haraway

(2006) have drawn on gender theorist Budith Butler to emphasize the importance of 'attentiveness to differences that matter' (Barad, 2007, p.382).

The question of justice within STS highlights long-standing tensions between normative and descriptive/constructivist claims in STS and post-humanist work (Mamo & Fishman, 2013). However, the separation of normative and descriptive approaches has been shown to be a dead end that must be moved beyond, as Latour demonstrated through a dismantling of relativistic constructivist claims to declare global warming a scientific truth (Latour, 2004).

Post-humanist approaches recognize the inter-related and connected nature of phenomena and, instead of the 'sovereign subject', focus on where arbitrary lines of difference are established to create 'differences that matter' (Barad, 2007). This attention to 'differences that matter' highlights the importance of attention to the way digital identification creates arbitrary categories that are inscribed onto the bodies of individuals to differentiate them from others. The digital nature of this categorization, and the greater interoperability of digital data means that these inscribed categories can spread widely as identification databases share and reinforce common categories, to the extent that they attain hegemonic status. Yet post-humanist accounts have shown how the creation of such truths are in fact always partial and subjective. Haraways's argument for an epistemology of 'situated knowledges' (Haraway, 1988, p. 575–599) highlights how acknowledging the contingent nature of truth claims can help produce more objective insight by recognizing the perspective and experience of others. Identification regimes and systems that do not reflect the situated nature of identification categories reinforce the disjunct between institutional categorization and the lived experience of those being labeled and ordered, making them the cause of tension and suffering.

The relationship between institutions and vulnerable individuals is one characterized by imbalances of power, imbalances that manifest in identification processes. Although STS has largely neglected identity, approaches such as critical theory inflected STS and feminist technoscience provide lenses through which to examine social relations, intersections of power, and to reveal possibilities for social change (Åsberg & Lykke, 2010, p. 299–305).

Braidotti's notion of a 'feminist relational ethics', drawing from Haraway and Barad, provides a way through the descriptive/normative deadend via attention to politics and power that attend the process of identity and identification (Bradotti, 2012; Braidotti & Regan, 2017). Braidotti grounds her conception of ethics in Butler's notion of 'becoming', which describes both life processes and deliberate endeavors, and is relational: becoming happens by virtue of relations that involve the human and the unhuman, organic processes, technologies, infrastructures, and flows of capital (Butler, 2014). Braidotti argues that the sovereign, liberal subject is no longer viable and instead calls for a conception of 'empowering modes of becoming', rather than moralistic frameworks of established protocols, sets of rules and guidelines for behavior (Bradotti, 2012, p. 173). For Braidotti, identity and identification is an emergent phenomena, 'a qualitative multiplicity that simultaneously unfolds other becomings, including becoming-animal, becoming-minoritarian, becoming-machine, becoming-other, and becoming-nomad' (Braidotti & Regan, 2017).

This conception of relational ethics helps theorize the foundation for a notion of Data Justice that can accommodate a relational conception of refugee identity, one of becoming in relation to others, not one of individualization and the institutional inscription of static categories. Importantly, this notion of refugee identity also helps create a theoretical space in which individual agency can have a role in the shaping the process of identification and becoming. This approach complements and supports emerging conceptions of agency in studies of refugee agency and institutional or national sovereignty. Tuastad (2017), writing on Palestinian refugees in Lebanon, argues that rather than lacking agency, '[H]istorically, in Lebanon, camp residents experienced an almost limitless access to free political organization. Similarly, also writing on Palestinian refugees in Lebanon, Ramadan and Fregonese (2017) describe how the relations of hybridity amongst the state, camp institutions and refugees 'reshaped Lebanon's state sovereignty in complex ways and forged hybrid spaces for refugee political agency to emerge. Conceptualising identity as relational can help reveal how identity and agency emerge from the interaction of state, refugee responding institutions and individuals.

A feminist STS approach to identification helps strengthen a theoretical approach to data justice as it recognizes and helps reveal the operation of power found in every process of identification and the institutional categorizing of individuals. This feminist approach also provides tools to help the theorization of practices that reflect the relational nature of identity and subjectivity, and might support the becoming and flourishing of vulnerable individuals in processes of identification.

7. Conclusion

This paper examines refugees' experiences with and perspectives on the digital identity systems used by humanitarian organizations to collect, manage, and share their personal data. We show how refugees face many challenges negotiating the digital systems that render them legible to service providers, discuss strategies refugees employ to exercise agency and control within these systems, and demonstrate the impact of these systems on their social relationships.

We contribute to the theorization of data justice in relation to identification systems by conceptualizing identity as always relational, employing the lens of feminist science and technology studies. We show how feminist accounts of STS can contribute to theorizing data justice in the use of digital identification systems for the management of vulnerable populations, such as refugees, by helping to reveal the relational nature of identity, the operation of power, and a space for individual agency and flourishing.

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Notes on contributors

Emrys Schoemaker is Research Director at Caribou Digital and a visiting Fellow at the London School of Economics and Cornell Tech in New York City. He has nearly two decades of experience in the field of international development, where his research focuses on the use of digital technologies in the Global South, particularly focusing on the use of mobile technology, the Internet and, more recently, on identification systems, including in the humanitarian sector and with refugees.

Dina Baslan has over nine years of experience in the humanitarian/development field. She has written and conducted research on topics related to media, displacement, and migration, often focusing on areas where the three disciplines intersect. She has over five years of holding full-time regional positions in the humanitarian/development industry. Dina has co-authored multiple publications on the conditions and lived experience of refugees in the Middle East and Africa, and is the co-founder of Sawiyan for Community Development, a Jordanian grassroots organisation focusing on advocacy, research and community building with minority refugees in Jordan.

Bryan Pon analyzes platform business models and user behavior in emerging markets,
with a focus on financial services, Internet access, identification, and the app economy.

Nicola Dell is an Assistant Professor at Cornell University based at the Cornell Tech campus in New York City. She also a part of the Jacobs Technion Cornell Institute. At Cornell, Nicki is a member of the Center for Health Equity, the Digital Life Initiative, the Atkinson Center for a Sustainable Future, and she co-founded the Clinic to End Tech Abuse. Nicki's research

interests are in human-computer interaction (HCI), computer security and privacy, and information and communication technologies and development (ICTD). Her main focus is on designing, building, and evaluating novel computing systems that improve the lives of underserved populations in the US and around the world.

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