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Between control and care: UNHCR and the use of biometrics

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Supervisor Sabina Hadzibulic, Örebro University

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Abstract: In recent years, humanitarian organisations increasingly embraced biometric technologies to respond to refugee crises. Therefore, this thesis studied the features and effects of the United Nations High Commissioner for Refugees' (UNHCR) biometric cash transfer programme in Jordan. The method that has been used is an analysis of relevant academic literature, reports, policies, and news articles examining biometric tools and the varying uses of biometrics in humanitarian contexts. In particular, attention has been paid to the effects of biometrics on refugee management, as well as on UNHCR and its beneficiaries in Jordan. The analysis uses the concepts of accountability, humanitarian neophilia, and humanitarian technology governance to improve understanding of what the use of biometrics means for the humanitarian sector and those dependent on it. The analysis shows that UNHCR's biometric cash transfer programme has improved downward accountability by speeding up registration processes, thereby ensuring quicker financial inclusion of refugees. Biometrics also improve upward accountability by providing instant metrics regarding beneficiaries, distributions, and other audit trails. Yet, the analysis also reveals serious concerns about experimentation with new technologies in humanitarian settings, a lack of informed consent and data safeguards for refugees, and UNHCR's increasing dependence on the private sector. UNHCR's use of biometrics also improves the reputation of these technologies, generates new protection challenges, and increases exclusion risks for non-registered refugees.

Keywords: biometrics, refugee management, cash transfer programmes, humanitarian innovation, accountability, experimentation, public-private partnerships, UNHCR

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List of Abbreviations

AAP	Accountability to Affected People
ATM	Automated Teller Machine
CAB	Cairo-Amman Bank
CCF	Common Cash Facility
CTP	Cash Transfer Programme
EU	European Union
GSMA	Global System for Mobile communications Association
ID	Identification Document
ILO	International Labour Organisation
MoI	Ministry of Interior
PDM	Post-Distribution Monitoring
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UVI	Unique Verifiable Identity
VRC	Voluntary Repatriation Centre
WFP	World Food Programme

I. Introduction

1.1. Background

Due to growing humanitarian needs and limited funding, the humanitarian sector is under pressure to increase the effectiveness and efficiency of its operations. One of the most common ways to do so is through the use of innovative technological tools such as blockchain and biometrics (Madianou, 2019a). Correspondingly, 10 out of the 17 Sustainable Development Goals mention technology, innovation, and productivity. Another strategy that is currently used to increase the effectiveness and efficiency of aid operations is the distribution of cash or vouchers instead of in-kind food (Jacobsen & Sandvik, 2018). As a result of these trends, humanitarians are increasingly cooperating with the private sector. They tap into businesses' financial and intellectual resources to modernize their activities and join forces with financial institutions to distribute cash (Malik, Mohr & Irvin-Erickson, 2018).

While the introduction of new technologies in aid operations sounds promising, it raises questions that require debate and consideration from scholars. Whereas the private sector is usually driven by self-interest and profit, humanitarian organisations are guided by the humanitarian 'do no harm' imperative (Sandvik, Jacobsen & McDonald, 2017). Furthermore, the privacy and security of beneficiaries could be jeopardized if there are leaks in the data systems of humanitarian organisations or if they share data with third parties. Additionally, disputes over the control of data can lead to suspensions in aid distributions. For example, the World Food Programme (WFP) suspended its food deliveries in rebel-held areas in Yemen last year as the Houthis refused the introduction of a biometric registration system, which was intended by WFP to prevent aid fraud (Latonero, 2019).

Although the drawbacks of applying new technologies to humanitarian operations should be examined, it is also crucial to delineate how and when these technologies can assist humanitarians. However, evidence shows that the understandings of biometrics are context-specific and highly variable (Olwig et al., 2019). To provide context-specific research, this thesis examines the effects of biometric technologies in the humanitarian field through an exploration of the United Nations High Commissioner for Refugees (UNHCR)'s activities in Jordan. Since 2012, UNHCR Jordan has been using iris scans to enrol Syrian refugees in a financial assistance programme through its partnership with Cairo Amman Bank (CAB) and the biometrics company IrisGuard (Reach Project, 2017).

1.2. Goals and Research Questions

The purpose of this research is to increase knowledge about the effects of private sector engagement and, more specifically, the use of biometric technologies in humanitarian action. Because biometrics are heterogeneous and crises are various, this study will investigate only one particular case, i.e. UNHCR's biometric cash transfer programme (CTP) in Jordan. Accordingly, the two main research questions are:

1. What are the features of UNHCR's biometric CTP in Jordan?
2. What are the consequences of the use of biometric technologies for the humanitarian sector and its beneficiaries?

1.3. Previous Research

The most relevant studies for this thesis examine biometric tools, the use of biometric technologies in financial assistance programmes, preferably in humanitarian settings, and the effects of biometrics on the humanitarian sector and its beneficiaries.

Gelb & Decker (2011) examine biometric CTPs in South Africa, Malawi, Pakistan, and India and find that biometric identification and payment systems can bring large benefits for developing countries because they lower administrative costs, reduce fraud, and can establish the identity of invisible groups. Likewise, Natarajan, Appaya & Balasubramanian (2018) find that digital biometric identification documents (IDs) improve the economic, political, and social inclusion of vulnerable groups, including refugees, in developing countries. Digital IDs help states and humanitarians to evaluate the scale and type of assistance needed. Moreover, they demonstrate "potential for efficiency, deduplication, and fraud assessments" (Natarajan, Appaya & Balasubramanian, 2018, p.31). What is valuable about these studies is that they compare and contrast the use of digital IDs by analysing numerous case studies and examining the operational efficiencies of biometric tools. Less convincing, however, is that they do not differentiate between refugees and other citizens while examining potential exclusion risks, as well as concerns related to privacy and consent. Comparatively, Gelb & Clark (2013) paint a more nuanced picture by synthesizing experiences from 160 biometric applications that have been used for economic, political, and social purposes in developing countries. They find that some cases suggest large returns to the use of biometrics, with potential gains in inclusion, efficiency, and governance. In others, biometric technologies were ineffective and increased

risks of exclusion (Gelb & Clark, 2013). The strength of this study is its acknowledgement that the usefulness of biometrics depends largely on context, perspective, and need.

Other valuable research that focuses exclusively on humanitarian contexts comes from critical scholars who examine the power relations that new technologies in humanitarian operations can construct or obscure. Sandvik, Jacobsen & McDonald (2017) find that humanitarian innovation can be regarded as experimental in a problematic sense by analysing biometric registration systems for refugees, Ebola data modelling, and the use of cargo drones to transport medication. Similarly, Jacobsen & Fast (2019) argue that the trialling of new technologies in humanitarian settings feeds into the constitution of humanitarian subjects as suitable test subjects and creates new challenges for humanitarians since they must secure biometric data. Madianou (2019a) further connects the rise of innovation in the humanitarian sector to increasing pressures for audit and accountability, the marketization of the humanitarian field, and the securitization of migration. Her concept of technocolonialism accentuates that digital developments reinvigorate the power asymmetries between refugees and humanitarians (Madianou, 2019a). Instead of looking into the risks of technologies for refugees, Machacek (2018, p.217) criticizes UNHCR's business partnerships for enabling marketization of the refugee response, which poses serious challenges to "the autonomy and legitimacy of the institution". Above all, these studies are relevant because they specifically assess the relationship between new technologies and humanitarianism. Furthermore, they clarify how technology might undermine UNHCR's ability to protect refugees and also gives rise to new protection needs. What is less persuasive is that these researchers examine general trends instead of probing specific case studies. The few available case studies on innovation in aid operations include McDonald's (2016) study on the Ebola outbreak, which raises questions about the legalities of privacy invasion for the public good in developing countries. Jacobsen (2015b) examines the risks stemming from technology failures and stemming from the successful uses of biometrics through an analysis of UNHCR's iris recognition technology in the repatriation of Afghan refugees.

1.4. Research Relevance

This research examines the use of biometrics in aid operations based on UNHCR's CTP in Jordan. The purpose is not to judge transformations in the relationship between the private sector and aid agencies but to improve understanding of what these transformations mean for the humanitarian sector and those dependent on it. Because many private sector actors and aid

organisations publish research on humanitarian-private sector engagement, there is a need to deepen academic knowledge on this issue and to endorse a more objective discussion.

Besides the scientific relevance of this research, its merits are practical and societal. Few academics have studied the recent accelerations in the use of digital innovation practices in humanitarian action. Consequently, decision-makers can merely rely on research by humanitarian organisations and businesses but not on studies with academic rigour to make decisions on the utilisation of these practices. Furthermore, contemporary debates around the impacts of technology typically focus on developed states with powerful civil societies, while it is key to also examine the impacts of these changes on vulnerable groups in developing countries. These groups sometimes cannot refuse technologies, do not necessarily understand new technological tools, and are often given few opportunities to speak up for themselves. Accordingly, scholars should study new technologies to ensure that these do not betray the humanitarian principles, and that they do no harm.

1.5. Limitations

There are various limitations to this thesis. The most relevant one is its complete reliance on secondary data. The research questions may have been answered more comprehensively if this data would be complemented with primary sources. In connection with this, another limitation could be that information is not publicly available or is available in a language other than English. Moreover, as Bryman (2012, p.150) notes “social research operates within a wider political context”. Private sector actors and aid agencies regularly finance research on public-private partnerships and the use of new technologies in the humanitarian sector. Because these actors might have a vested interest in the outcomes of research, it is important to recognize potential bias and to distinguish between facts and opinions by evaluating the quality of evidence presented in other research (Winchester & Salji, 2016).

Another limitation is that biometric technologies are subject to substantial subjective interpretation (Olwig et al., 2019). Thus, the realities of Syrian refugees using biometrics and the effects of these technologies on refugees might vary considerably within Jordan. Because this research is based on secondary data and is limited in scope, it might be difficult to include all possible perspectives. Other limitations relate to a lack of clarity in UNHCR’s activities. While UNHCR distributed its Data Protection Policy in 2015, it is unclear how long UNHCR holds onto biometric data (O’Donovan, 2015). Furthermore, UNHCR does not openly share

every agreement with host governments and corporations. Therefore, there is no way to know what UNHCR decides upon with these stakeholders and how they deal precisely with the biometric data that they have (Jacobsen, 2017).

1.6. Thesis Outline

The first chapter provided the introduction to this study. It specified the research goals and questions, introduced previous research, and discussed the relevance of this work and its limitations. The second chapter explicates which method will be used. The third chapter provides background information about Jordan's humanitarian and legal context. The fourth chapter presents the conceptual framework through an exploration of the concepts of biometrics, accountability, humanitarian neophilia, and humanitarian (technology) governance. The fifth chapter is the analysis, which explores the features of UNHCR's CTP and its consequences. The last chapter is a concluding discussion that summarises and analyses the findings of this thesis.

II. Method

This thesis is based on secondary data. Relevant academic literature that will be analysed includes themes such as iris scanning biometrics, biometric data, and public-private partnerships in refugee settings. Besides, this thesis investigates other materials that address how and why UNHCR Jordan has implemented biometrics in its CTP, as well as sources that discuss the positive and negative consequences of this application. These materials can be categorized into three overarching categories:

1. Reports by UNHCR and other organisations about biometric tools, public-private partnerships, and the impact of biometrics on aid operations;
2. Policies and guidelines for UNHCR that suggest ways to deal with biometric data collection or to enhance understanding of biometrics;
3. Newspaper articles and statements made by journalists, humanitarian actors, human rights organisations, and private sector actors.

Each category includes the following materials:

1. Some of the most important reports that are used are UNHCR's annual Post Distribution Monitoring (PDM) reports for Syrian refugees in Jordan. These reports are important for this thesis since they provide information about the effectiveness of UNHCR's CTP and assess the satisfaction with UNHCR's delivery methods each year. This means that they examine the practicalities of using iris-enabled ATMs in Jordan. Another report that is referred to is UNHCR's (2017) *Review of the Common Cash Facility Approach in Jordan* as it provides a detailed review of UNHCR's public-private partnership approach. Other organisations that have published reports about UNHCR's biometric CTP are the GSM Association (GSMA) and the Reach Project. These reports are included because they provide up-to-date information about the humanitarian context and UNHCR's CTP in Jordan.
2. The policies and guidelines that will be used in this thesis are UNHCR's (2018a) *Accountability to Affected People (AAP)* framework and UNHCR's (2015) *Policy on the Protection of Personal Data of Persons of Concern to UNHCR*. The former is relevant as accountability plays an essential role in the argumentation for biometrics (Jacobsen & Sandvik, 2018), while the latter is relevant because it lays down the guidelines for processing beneficiaries' data, including rules on biometric data (UNHCR, 2015).

3. The newspaper articles that are used were published by the New York Times, the Wall Street Journal, die Zeit, and the New Humanitarian. These media outlets have been chosen because they are widely recognized news sources. In particular, the New Humanitarian is a valuable source because this independent non-profit news organisation has published numerous articles about the promises and risks of humanitarian technologies. In general, it is useful to include newspaper articles because biometrics received considerable media attention after the WFP suspended aid in Yemen last year (Latonero, 2019). This thesis also quotes some of UNHCR's articles to clarify how UNHCR describes its biometric operations and what the implications are of those descriptions.

Apart from newspaper articles, this research includes statements of UNHCR's employees, Syrian refugees in Jordan, and IrisGuard's team. These statements are used to highlight different perspectives on the use of biometrics and to enhance understanding of the reasons behind the uptake of biometrics in Jordan's refugee response.

While analysing these materials, particular attention will be paid to the main features of UNHCR's biometric CTP in Jordan, which effects commonly relate to the use of biometrics, and which effects apply to UNHCR's operation in Jordan. To avoid bias within the analysis, it will be important to avoid cherry-picking of material that supports a certain perspective. Additionally, the quality of research will be assessed by identifying study design, data collection, data analysis, and the conclusions drawn by article authors (Winchester & Salji, 2016, p.311).

III. The Case of Jordan

3.1. Humanitarian Context

Due to its location in the heart of the Middle East, Jordan has long served as a refuge for those fleeing the region's crises. The country welcomed Palestinian refugees after the state of Israel was created in 1948 and following the loss of the West Bank to Israel in 1967. It also welcomed refugees from Kuwait and Iraq after the wars in 1990 and 2003 (Al Abed, 2004). Because of the war in Syria, Syrians began moving to Jordan in 2011. The Jordanian government has estimated the total number of Syrian refugees, registered and unregistered, around 1.3 million (Chehade, McConaghy & Meier, 2020, p.12). If those estimations are correct, Syrians currently represent more than 10% of the total Jordanian population. Accordingly, Jordan hosts the second-highest share of refugees per capita globally. Approximately 23% of the registered Syrian refugees are living in camps. Others live outside of camps in urban areas such as Amman, Mafraq, and Irbid (Zyck & Armstrong, 2014, p.5).

There are strong concerns about the economic and social impact of Syrian refugees on the Jordanian economy. These concerns relate to the availability of job opportunities, wage levels, rental prices, and working conditions for Jordanians and refugees (Abu Hamad et al., 2017). Combined with concerns that refugees will aggravate Jordan's pre-existing water shortages, these concerns sometimes lead to tensions between host communities and Syrians. Only companies that provide services or products to refugees are seen to have benefited from the large influx of refugees (Zyck & Armstrong, 2014).

In terms of international support, the United Nations Office for Coordination of Humanitarian Assistance (UNOCHA) notes that Jordan received around \$50 million in humanitarian assistance annually in 2010 and 2011. Assistance increased to over \$900 million every year from 2013 until 2016. Funding has declined since and was \$664 million in 2019 (UNOCHA, 2020). Due to the rapid expansion in international assistance, humanitarian organisations and the private sector both had to adapt. Importantly, Jordanian business owners said that the swift increase in humanitarian aid caught them off guard. Without a recent history of large-scale humanitarian programmes, they had not considered aid agencies as potential partners or customers (Zyck & Armstrong, 2014, p.6).

3.2. Legal Context

Jordan is not a signatory to the 1951 Refugee Convention or its 1967 Protocol. Although the national laws make few references to asylum-seekers and refugees, the Constitution specifies that “political refugees shall not be extradited on account of their political beliefs or for their defence of liberty” (International Labour Organisation [ILO], 2015). Jordan cooperates with UNHCR based on a Memorandum of Understanding (MoU) that was created in 1998 and renewed in 2014. The MoU authorises UNHCR to determine the refugee status of asylum-seekers in Jordan, outlines the main procedures for international protection, and incorporates the definition of a refugee, as well as the non-refoulement principle. Although the protection space is mostly favourable in Jordan, the Jordanian government does not officially recognize refugees under its domestic laws and refers to Syrian refugees as “visitors” or “guests” (ILO, 2015, p.12). Apart from activities related to status determination, UNHCR provides refugees with protection, health, education, cash assistance, and other services. Its mission is “to safeguard the rights and well-being of refugees” (UNHCR, 2020a).

In terms of legal documentation, Syrian refugees must register with the Ministry of Interior (MoI) to obtain a biometric service card upon arrival in Jordan. Refugees residing outside of camps must also register with UNHCR to acquire an Asylum Seeker Certificate. Syrian refugees cannot open regular bank accounts (Reach Project, 2017, p.27). Despite the collection of biometric data in Jordan, there are no data protection laws in the country. The Ministry of Communications has proposed drafts for a data protection bill since 2014 but these have not been approved yet. The foundation for these drafts is the European Union’s (EU) General Data Protection Regulation (GDPR) because it incorporates crucial concepts like transparency, accuracy, storage limitation, and data minimalization. Critics have said that Jordan’s proposed data protection bills are undesirable as they propose appointing government members to the privacy commission, which should be politically independent (GSMA, 2019, p.8).

IV. Conceptual Framework

4.1. Biometric Technologies

The term biometrics describes the technologies that are used to collect and process biometric data. Biometric data can be defined as “any automatically measurable, robust, and distinctive physical characteristic that can be used to identify or verify the claimed identity of an individual” (Rahman, Verhaert & Nyst, 2018, p.4). Physical characteristics that can be captured include fingerprints, irises, DNA, and facial patterns (Madianou, 2019b). Biometric data can be deployed for identification and verification purposes. Whereas identification processes check biometric data against a large database of biometric profiles, verification matches data against a biometric reference stored in a system. In general, identification processes cause a higher risk of false matches than verification (Rahman, Verhaert & Nyst, 2018, p.6). Humanitarian organisations typically deploy biometrics for identification purposes. Accordingly, UNHCR initially turned towards biometrics to prevent duplication, which requires checking someone’s biometric profile against a larger database of profiles (Madianou, 2019b).

4.2. Accountability

To explore the consequences of biometric technologies for humanitarian practice, this research refers to the concept of accountability. It is important to note that there is no agreement among scholars on one common definition of accountability. For example, Davis (2007, p.2) terms it “a characteristic of relations of hierarchal power, whereby those responsible for an action report on their actions to those they are responsible to”. Other scholars recognize two strands of academic thinking of accountability. The first interprets it as a normative concept, which “elaborates standards for the evaluation of the behaviour of public actors” (Cubie, 2017, p.136). The second perceives accountability as a relational mechanism, which is an institutional arrangement where someone can be held accountable by another actor (Cubie, 2017, p.136).

Following the relational approach, this research uses Najam’s (1996) conception of accountability, which was created for non-governmental organisations (NGOs) and separates three types of accountability. The first type concerns upward accountability, which relates to the relationship of NGOs with donors and focuses on the “spending of designated money for designated purposes” (Najam, 1996, p.342). The second type is downward accountability and refers to relationships with “groups to whom NGOs provide services” (Najam, 1996, p.345). The third type refers to NGOs’ responsibilities to their mission, staff, and partners (Najam,

1996). These three aspects indicate that accountability mechanisms generally aim to prevent abuse of power and to guarantee norm-conforming behaviour (Türk & Eyster, 2010, p.160).

Najam's (1996) conception of accountability has been selected as it applies to multilateral organisations as well. Upward accountability runs from UNHCR to the organisations or governments that finance its operations, reflecting the authority delegated to the organisation by these actors. Downward accountability denotes UNHCR's (2018a, p.50) *Accountability to Affected People* (AAP) or "the responsible use of power by humanitarian actors, combined with effective and quality programming that recognizes the dignity, capacity, and abilities of communities of concern". UNHCR's AAP framework holds four essential components: (a) participation and inclusion; (b) communication and transparency; (c) feedback and response; and (d) organisational learning and adaptation (UNHCR, 2018a, p.51). The third type of accountability relates to UNHCR's responsibilities to its mission, staff, and partners.

4.3. Humanitarian Neophilia

Attempts to improve accountability in the humanitarian sector increasingly focus on digital technologies so affected people can use those to hold humanitarians accountable for their actions. Hence, Madianou (2019b) links the focus on accountability in aid operations to the logic of solutionism, which is "the desire to find technological solutions for complex social problems" (p.587). Similarly, Scott-Smith (2016) describes the humanitarian enthusiasm for innovation as humanitarian neophilia, which "combines an optimistic faith in the possibilities of technology with a commitment to the expansion of markets" (p.2230). On the one hand, scholars who see technological innovation and the private sector as remedies for problems in the humanitarian sector are described as problem-solving theorists because they focus on improving the effectiveness of aid operations (Christie, 2015). Critical theorists, on the other hand, question how new technologies and economic vocabulary can conceal power differentials. In this line of thought, humanitarians rather than beneficiaries benefit from innovation. Furthermore, innovation is becoming a goal in itself, without proper identification of the actual merits for beneficiaries (Scott-Smith, 2016). After examining the connections between biometrics and accountability, this thesis evaluates if humanitarian neophilia plays a role in UNHCR's activities in Jordan.

4.4. Humanitarian (Technology) Governance

Another useful concept that helps to elucidate the role of biometrics in the humanitarian field is Barnett's (2013) conception of humanitarian governance. Humanitarian governance is generally described as a project "to secure the welfare of the population, the improvement of its conditions, the increase of its wealth, longevity, health" (Foucault, 1991, p.100). Likewise, Fassin (2007, p.151) portrays it as a mission "in the name of a higher moral principle that sees the preservation of life and the alleviation of suffering as the highest value of action". While it is uplifting that humanitarian action has nowadays become entrenched in global affairs, the concept of humanitarian governance recognizes that "any act of intervention is also an act of control, no matter how well-intended" (Barnett, 2011a, p.12). In other words, humanitarianism is partially paternalistic because it "takes as its object the saving of individuals, which presupposes not only risking others but also making a selection of which existences it is possible or legitimate to save" (Fassin, 2007, p.501).

Besides its focus on power asymmetries between aid agencies and beneficiaries, Barnett's conception of humanitarian governance is valuable for this thesis because it emphasizes that the humanitarian sector is diversifying. This means that the humanitarian sector increasingly encompasses non-traditional actors like diaspora groups, the private sector, and social technology groups. Furthermore, Barnett (2013, p.388) notes that "the aid community has increasingly relied on new informational and social technologies to improve the delivery of aid". While some scholars perceive technology and data as neutral instruments, Jacobsen & Fast (2019) propose the concept of humanitarian technology governance to emphasize that technologies are not inevitably neutral but can embody systems of power that blur care and control (Barnett, 2011a). The concept of humanitarian technology governance combines Chamayou's (2008) understandings of vile bodies and experimentation with insights from Science and Technology Studies (STS) of 'co-constitution' to unravel how technologies can reproduce relations of domination by expanding access to digitalised data and how humanitarians should shield this accessibility against the risk that this data would be used for other purposes than humanitarian protection (Jacobsen & Fast, 2019, p.S154).

Chamayou's (2008) interpretation of experimentation calls attention to what he terms 'vile' bodies, which are foul bodies to which societies accord lesser value. Considering those bodies as vile justified the experimentation of new medical practices on specific groups throughout

history. Specifically, Chamayou (2008) develops a typology of vilization technologies, which are the technologies that exercise conditions of power by designating bodies as vile (Agier, 2010), surplus (Duffield, 2007), or less valuable (Fassin, 2010). Looking at experimental technologies instead of medical practices, Jacobsen & Fast (2019) use Chamayou's account of experimentation to explore the harmful side effects of humanitarian technology governance. Insights from STS further recognize two types of constitutive processes: constitution by technology and the production of technology in a certain capacity. This means that technology is capable of 'agentic capacity' because it influences the construction of social order (Jacobsen, 2017; Jacobsen & Fast, 2019). Going beyond the limitations of a problem-solving approach, this thesis will use these concepts to examine how biometrics affect the relations between humanitarians and beneficiaries.

V. Analysis

5.1. Features of UNHCR's Cash Transfer Programme

5.1.1. A Public-Private Partnership

UNHCR has used diverse transfer modalities to deliver cash to beneficiaries including direct cash payments, delivery through micro-finance institutions or bank accounts, as well as electronic payment systems like mobile money transfer systems (UNHCR, 2012). In Jordan, UNHCR provides cash to refugees through a public-private partnership with the local bank, CAB, and the biometrics company IrisGuard (Gilert & Austin, 2017). UNHCR first started working with CAB in 2007 to assist refugees from Iraq. These refugees received cards to withdraw money (Zyck & Armstrong, 2014). CAB began its cooperation with IrisGuard in 2008 because the bank wanted its customers to be able to scan their irises to withdraw cash (McIntosh, 2009). When the influx of Syrian refugees started in 2011, UNHCR also turned towards IrisGuard's iris recognition system to register large numbers of new arrivals within a short period. Accordingly, one of UNHCR's staff members said, "we are dealing with over half-a-million people in various locations, so we need to prevent multiple registrations" (Jacobsen, 2015a, p.76). After implementing biometric authentication functions in its registration process, UNHCR instigated iris scans in its CTP as well. From 2012 until 2015, CAB and UNHCR separately registered refugees' iris scans. Hence, the biometric data of UNHCR's beneficiaries were stored on separate servers, one of which was owned by CAB (Reach Project, 2017, p.26).

5.1.2. The EyeCloud Server

The second feature is the EyeCloud server, which UNHCR (2017) describes as "a secure and encrypted network that can be used to authenticate refugees against biometric data stored in the UNHCR database". IrisGuard created the EyeCloud for UNHCR Jordan in 2016 to store the biometric data of refugees with greater security. Because of the EyeCloud, beneficiaries' biometric data is stored on one server instead of two. Since then, UNHCR has rolled out the EyeCloud in its activities throughout the Middle East. As mentioned previously, UNHCR registers Syrians upon arrival into Jordan. During the registration process, each family member shares his or her biographic and biometric data. The biometric data include iris scans and an individual photograph (Abu Hamad et al., 2017). The iris scanners capture a greyscale image of the iris and turn it into a unique verifiable identity (UVI) that is used for cross-matching

purposes. The EyeCloud receives refugees' UVIs via the Internet and stores them along with associated personal data (Baah, 2020, p.5).

After the registration process, UNHCR selects vulnerable refugees for financial assistance. Each beneficiary household selects one cash collector as the monthly recipient. UNHCR makes payments via the virtual bank accounts of its beneficiaries, which are generated using UVIs from the EyeCloud server. When the cash is ready for collection, UNHCR sends an SMS to eligible refugees. Beneficiaries then collect their cash from one of the 90 plus iris-enabled ATMs that are available in every governorate in Jordan (Gilert & Austin, 2017). Upon collection, the ATMs take a picture of the beneficiaries' iris, encrypt the image, and send it via a secure connection to the EyeCloud. After the EyeCloud confirms the user's UVI, the picture is deleted (O'Donovan, 2015).

Besides the use of iris scans, UNHCR also issues cards for "minors where the caregiver is responsible for spending and for beneficiaries where iris scans are not applicable or in cases of movement disabilities" (Hall, 2019, p.11). UNHCR gives disabled refugees and those with medical conditions cards because they might be unable to access ATMs. Children seeking asylum, particularly if they are unaccompanied, also require additional assistance in withdrawing cash. UNHCR gives these groups ATM cards so that a relative or guardian can collect the money on their behalf (Winton, 2018, p.25).

5.1.3. The Common Cash Facility

The third feature of UNHCR's CTP is its expansion into the Common Cash Facility (CCF). The CCF is a platform that facilitates the cooperation of numerous humanitarian organisations to provide cash assistance in Jordan. By pooling funds, the CCF ensures that humanitarian agencies get direct and equal access to a financial service provider for cash transfer arrangements. The CCF presently draws on UNHCR's partnership with CAB and IrisGuard and includes five UN organisations, sixteen NGOs, and seven Jordanian municipalities (Gilert & Austin, 2017; UNHCR, 2020b, p.3). These organisations pool resources to get the best possible transfer rate but open bank accounts individually to maintain separate relationships with CAB. The bank transfers funds into virtual bank accounts based on each partner's list of beneficiaries. The distribution process is the same as for UNHCR's CTP. If beneficiaries receive assistance from multiple agencies, the iris-enabled ATMs show the amount allocated to

them by each agency. UNHCR manages requests to change the cash collector and implements those changes on the EyeCloud (Gilert & Austin, 2017).

5.2. Linkages with Humanitarian Governance

These features relate to Barnett's (2013) framework of humanitarian governance in various ways. Above all, the public-private partnership indicates that "diversification of the humanitarian sector might be even greater than realized" (Barnett, 2013, p.387). While IrisGuard and CAB are not international humanitarian actors, they fulfil key roles for a large number of refugees in Jordan and other countries in the Middle East. UNHCR transfers over \$5.5 million per month to 32,500 Syrian refugees in Jordan through its partnership with CAB (Hall, 2019, p.6). IrisGuard (2020) notes that more than 2.5 million refugees and asylum-seekers globally are using its technologies. Whereas private sector actors like IrisGuard and CAB are in a direct relationship with refugees, other corporations simultaneously function as donors, suppliers, and technical advisors (Zyck & Armstrong, 2014). Suitably, UNHCR (2018b, p.3) notes that globally "over the last 10 years, financial support to UNHCR from the private sector has increased from \$34 million to \$400 million". Europe and the Americas contributed 60% of the \$400 million. Asia and the MENA region funded the other 40%. These findings demonstrate that humanitarianism, "like globalization itself, is becoming more diverse" (Barnett's, 2013, p.387). Apart from funding aid operations, the private sector also plays a role in Jordan's refugee response by offering employment and business opportunities, as well as goods and services. For example, WFP worked with Jordanian corporations to establish supermarkets in Za'atari refugee camp. Microsoft cooperates with Jordanian non-profits to provide coding education to Syrian refugees. IKEA invests in renewable energy in urban refugee settings in Jordan. Zain and Facebook also provide free Wi-Fi connectivity to refugee communities in Jordan in cooperation with UNHCR (Berfond & Adrian, 2019). These examples indicate that the current age of humanitarianism is characterized by "the expansion of global capitalism, now known as globalization" (Barnett, 2011a, p.39) with "new actors" such as corporations doing a considerable amount of work in emergencies (Barnett, 2013, p.389).

Apart from diversification of the humanitarian sector, humanitarian governance applies to UNHCR as the organisation has considerable moral and expert authority. This authority allowed UNHCR to expand its protection and assistance activities throughout the years (Barnett, 2011a). Consequently, UNHCR exercises "governance functions over an

unprecedented number of individuals” (Jacobsen & Sandvik, 2018, p.1509). Because of these governance functions, UNHCR functions as the spokesperson for and guardian of refugees. This role implies that “UNHCR knows what is in the best interests of refugees, a population that is often assumed to be too uninformed to know what is in its best interests” (Barnett, 2011b, p.105). This is paternalism by another name, which indicates that UNHCR’s assistance and protection activities out of compassion and care exist together with command and control. Moreover, UNHCR operates with a classification scheme that distinguishes between refugees, migrants, internally displaced peoples, and other types of displaced individuals (Barnett & Duvall, 2004, p.178). The act of classification, labelling, and sorting is a feature of power that relates to Barnett’s description of paternalism in the humanitarian sector because UNHCR makes a selection of who deserves assistance and who does not (Fassin, 2007). Meanwhile, UNHCR allocates authority to corporations by stressing that the private sector has “unique assets and expertise that they can bring to UNHCR’s operations” (UNHCR, 2016, p.6). Barnett (2013, p.392) argues that the discourse of expertise ascribes different competences to “those who occupy the role of expert and those who occupy the role of non-expert”. The belief that some people know more than others generates a space where experts can interfere without others’ consent as they can objectively judge what is needed (Barnett, 2013). The willingness to intervene in someone else’s life without consent, while potentially violating someone’s liberty or dignity, is “a hallmark of paternalism” (Barnett, 2011a, p.45).

5.3. Consequences for Accountability

The deployment of biometric technologies in its refugee response affects UNHCR’s accountability mechanisms. In terms of upward accountability, UNHCR’s donors prefer biometrics as they improve effectiveness and efficiency by improving coordination among humanitarians and avoiding beneficiary duplication. If donors know that UNHCR spends money well in Jordan, it also becomes attractive to fund relief operations in the country (O’Donovan, 2015). Other impacts relate to value for money as well because the use of biometrics reduced the CTP’s overhead costs from approximately 20% to 2% between 2013 and 2015 (Balakrishnan, 2015). UNHCR’s use of biometrics further improves upward accountability because the organisation can provide donors with detailed reports of the assistance disbursed, which ensures compliance with audit requirements. These benefits indicate that the EyeCloud ensures full control and visibility by each humanitarian organisation through the CCF platform (UNHCR, 2017).

Attention must also be given to how the use of biometrics shapes downward accountability. The biggest advantage of biometrics for refugees is that they enable quicker registration processes. This is especially important in countries like Jordan where UNHCR rapidly had to register overwhelming numbers of refugees. Accordingly, UNHCR (2013) noted that “the time that Syrians need to register as refugees in Jordan has been slashed from up to eight months to zero after the UN refugee agency rolled out new technology”. Besides speeding up refugee registration, biometrics save beneficiaries time since they do not have to visit CAB to register for financial assistance. Instead, the initial registration with UNHCR instantly enrolls them to digital banking (Rahman, Verhaert & Nyst, 2018). Moreover, refugees can be sure that resources are distributed fairly because iris scans enable UNHCR to catch those who try to cheat the system (Jacobsen & Sandvik, 2018).

Besides improvements through faster refugee assistance, downward accountability is strengthened through UNHCR’s helpline mechanism. Through the helpline, Syrian refugees can receive information and register complaints about the CTP, as well as “access information about home visits, eligibility criteria and the waiting list, along with the option of referrals in selected cases” (Giordano et al., 2017, p.15). In 2016, 29% of the respondents of UNHCR’s Post-Distribution Monitoring (PDM) survey called the helpline. The helpline team received around 1,400 calls per day for questions about cash assistance, resettlement, and registration (Giordano et al., 2017, p.15). Since 2016, UNHCR’s helpline expanded significantly as it currently receives over 560,000 calls per month. Accordingly, 81% of the PDM respondents say that they have used the helpline (Hall, 2019, p.28). Apart from feedback mechanisms, humanitarian organisations assume that datasets derived from people in crises “reveal their needs thus contributing to the democratization of the humanitarian response by correcting the power asymmetries on which it is based” (Madianou, 2019a, p.4).

The third aspect of accountability relates to UNHCR’s responsibility to its mission, staff, and partners. One of the strongest connections between UNHCR’s mission and biometrics is that UNHCR receives more accurate population figures by using biometrics. These figures are a vital part of UNHCR’s appeals for funding and financial resources are necessary to assist refugees. Furthermore, iris recognition technologies ensure that UNHCR’s allocated cash assistance reaches the intended recipients not just once but every time money is withdrawn from the account (UNHCR, 2017). The system also avoids problems around withdrawal fraud because it is impossible to use someone’s card or personal information to access assistance

(Zyck & Armstrong, 2014). Apart from boosting accuracy and averting fraud, authentication through the EyeCloud also saves UNHCR time and resources that were previously used to verify the identity of refugees. Moreover, biometrics yield traceability benefits by including real-time withdrawal data that is disaggregated by ATM locations. The data is transferred instantly to UNHCR, enabling the organisation to foresee and respond to beneficiary problems (Rahman, Verhaert & Nyst, 2018, p.7). Such detailed data eases internal and external accountability reporting. Looking at UNHCR's partners, the CCF ensures that other humanitarian organisations in Jordan also enjoy low transaction fees. Besides, the CCF is beneficial for aid agencies in Jordan because they can access the EyeCloud without entry or exit fees. This allows humanitarians to incorporate a larger number of beneficiaries for short-term and one-off payments, for example, to increase household expenditure during winter. These so-called economies of scale have also reduced overhead costs (UNHCR, 2017).

5.4. Innovation without Representation

Although UNHCR emphasizes that the speed and accuracy of biometric systems automatically improve refugee protection, its PDM reports allow for a critical reading of the programme, which is absent from its official representation. The PDM reports highlight that the majority of UNHCR's beneficiaries (95%) is satisfied with cash deliveries via ATMs. Nevertheless, the reports also indicate that UNHCR experiences numerous challenges in the quality of its service delivery (Gaunt, 2017; Hall, 2019). After the EyeCloud was launched in 2016, a substantial percentage of PDM respondents (64%) experienced difficulties using the iris-enabled ATMs. This number dropped to 53% and 34% in the second and third quarter but rose to 53% again in the last quarter. Beneficiaries needed multiple attempts to successfully scan their irises (68%) and there were long lines at ATMs (23%). Meanwhile, only 41% of the respondents knew how they could reach UNHCR's helpline mechanism to access information or report complaints. Remarkably, the number of beneficiaries that experienced difficulties with ATM cards was significantly lower at 18% (Gaunt, 2017, p.28).

Since then, satisfaction with UNHCR's helpline mechanism has improved. In 2019, beneficiaries' knowledge of where to lodge complaints increased to 83% (Hall, 2019, p.34). Nevertheless, technical challenges with the use of iris-enabled ATMs persist. Sometimes beneficiaries were unable to scan their eyes (6%), ATMs were out of service (36%), and beneficiaries had to scan the irises multiple times (53%). One in five respondents had to scan their irises eight or more times before successfully withdrawing money. Apart from technical

issues, 24% of the PDM respondents experienced crowding. Because of long queues, focus group participants noted that they feared potential theft during the withdrawal process. Especially women indicated that they were scared because of crowds and because some men did not give them space to withdraw. In total, a substantial percentage of beneficiaries (40%) faced difficulties while using iris-enabled ATMs (Hall, 2019, p.32).

Likewise, Staton (2016) notes that iris scanning technologies in supermarkets has made life more difficult for some refugees in Jordan's Azraq camp. One of them, Sabha, a mother of six, said that she would rather have her son run errands on her behalf, however "he cannot do so because of the iris scanner". Because she is registered as the cash collector for her household, Sabha must access the monthly WFP allowance. Her grievance is a recurring theme among other shoppers, who argue that cards give them the freedom to collaborate with relatives and ask friends to buy groceries for them. In response, WFP's spokesperson said that people experiencing problems can request not to use it or they can allocate the bank account to a relative. Yet, beneficiaries were uninformed about these options (Staton, 2016).

Similar problems might arise for UNHCR's beneficiaries because UNHCR does not allow refugees to choose between iris scans or cards, which is problematic as the most common complaint about UNHCR's biometric CTP relates to the iris recognition devices. These complaints also raise serious questions about UNHCR's dedication towards all four components of downward accountability. Although the helpline mechanism has boosted UNHCR's communication with refugees by providing information and collecting feedback, the biometric system has not strengthened UNHCR's accountability in terms of participation and inclusion. UNHCR's AAP framework (2020c, p.3) notes that UNHCR should "establish arrangements that permit meaningful participation at all stages of the operation's management cycle". Nonetheless, decision-making processes about biometrics do not incorporate refugees.

Apart from the technical challenges and the lack of inclusion of refugees, there is a lack of evidence to whether biometrics reduce fraud. Using biometrics in humanitarian operations guarantees that accountability checks occur at the 'downstream' end of the supply chain, i.e. counting and identifying beneficiaries, as well as checking that they receive the right amount of assistance. This level of accountability does not inspect systematic issues along the supply chain, while the main problems in terms of fraud happen upstream (Rahman, Verhaert & Nyst, 2018, p.8). This does not mean that biometrics are not useful but it illustrates how UNHCR

primarily puts accountability checks on beneficiaries instead of addressing the potential of aid diversion higher up.

These findings indicate that UNHCR might suffer from Scott-Smith's (2016) notion of humanitarian neophilia. UNHCR presents biometric technologies as the main solutions to its problem but, through its enthusiasm about novelty, seems to forget that some refugees might not genuinely benefit from iris scans. Another option is that UNHCR purposefully overlooks the challenges of its biometric CTP since the benefits for upward accountability simply outweigh the problems for downward accountability (Jacobsen & Sandvik, 2018). Apart from its enthusiasm about technologies, humanitarian neophilia can be found in UNHCR's commitment to the expansion of markets, which shows in a review of the CCF, which notes that "collaboration and coordination between humanitarian agencies with the private sector can be replicated elsewhere and adapted to other contexts" (Gilert & Austin, 2017, p.5). In a similar vein, UNHCR is extremely dedicated to the expansion of biometric systems, which shows in its objective to install biometrics in at least 75 UNHCR missions by 2020. By then, UNHCR will run one of the largest multinational biometric programmes globally (Thomas, 2018).

5.5. Consequences of Humanitarian Technology Governance

Having discussed the consequences of biometric technologies for accountability, this section analyses how biometrics affect power relations in the humanitarian field. The first part examines the experimental sentiments in UNHCR's activities. The second part explores how the constitutive effects of biometrics render new aspects of life open to interference.

5.5.1. Governance of Humanitarian Technology Use: Refugees as Test Subjects

In 2002, UNHCR used iris scans for the first time to register returning Afghan refugees. As biometric equipment had not been tried before in a hot and dusty location, there was a possibility that the iris scanners would not identify refugees correctly. Therefore, UNHCR depicted this technology use as 'experimental' (Jacobsen & Fast, 2019, p.S160). Initially, UNHCR installed iris scanners in one voluntary repatriation centre (VRC). Afterwards, iris recognition was arranged in five VRCs and all Afghans wishing to obtain reintegration assistance were obliged to enrol. UNHCR also launched a biometric registration system in Malaysia in 2006 and launched other biometric projects in Djibouti, Kenya, Ghana, and Tanzania in 2007. UNHCR openly described these projects as 'pilots' and 'experimental' (Jacobsen, 2015a; Jacobsen, 2017).

Although UNHCR had been using iris scanning technologies for a decade, UNHCR Jordan “was the first UNHCR operation in the world to introduce iris-scanning biometrics to register refugees” (Ammourah & Carlisle, 2019) and “to use iris scan technology to enable refugees to access monthly cash assistance provided by UNHCR” (Dunmore, 2015). Although UNHCR Jordan has not described its programme as experimental, the introduction of iris scans was essentially a new biometric trial as the technology had not been used on such a large scale before. Appropriately, the German newspaper *Die Zeit* published an article about UNHCR’s programme in Jordan titled “Tested on Millions of Non-Volunteers” (zur Nedden & Dongus, 2017). This article highlights that the prevalence of biometric technologies in developing countries provides a strong contrast with the approaches in developed countries. Whereas UNHCR embraces biometrics as the key to effective humanitarian aid, Western democracies have strongly debated these technologies in recent years. As a result, the EU’s GDPR includes a high threshold for the definition of consent and a right to removal of data, prohibits making personal information public, and expands protections against automated systems’ decision-making. Moreover, the EU has strict rules for the testing, validation, and applications of new tools. Because of those regulations, IrisGuard’s technologies cannot easily be installed in European countries (zur Nedden & Dongus, 2017). This contrast shows that humanitarians accept high levels of risk in crises, which they can defend with reference to the urgency of humanitarian situations. These constructions of urgency, combined with the humanitarian inclination towards innovation, has generated a situation where the private sector can more or less trial new technological tools in emergency contexts (Sandvik, Jacobsen & McDonald, 2017). This indicates that the use of new technologies in humanitarian settings is constitutive of subordinate subject categories (Jacobsen & Fast, 2019). Following Chamayou’s (2008) argument, humanitarian technology governance thus deems refugee bodies as ‘fit’ for experimentation and testing new technologies.

A crucial question in the experimentation of biometric technologies in crises is the issue of informed consent for the processing of data, which relates to the process whereby the data subject agrees to provide biometric data voluntarily and is informed about the controller’s identity and what the data will be used for. Although it allows for exceptions, UNHCR’s Data Protection Policy (2015) specifies that UNHCR should obtain consent from refugees before collecting their data. Yet, while interviewing Syrian refugees in Azraq and Za’atari refugee camps, a Redfish documentary (2018) finds not even one individual who has been asked for

consent before UNHCR's registration process. Refugees also complain of pain from the iris scanners and say that they are not good for their eyes (Redfish, 2018). These complaints call attention to the potentially harmful side effects of biometrics and the fact that experimentation within humanitarian settings does not end after a trial phase. Instead, UNHCR's proliferation of biometric technologies increases potentially negative side effects (Jacobsen & Fast, 2019).

Another challenge is that, even if UNHCR would obtain consent, beneficiaries may have limited previous exposure to biometric technologies and their risks. In particular, older individuals might not be included in the digital age and sometimes do not fully understand the harms that may accrue to them. Similarly, unaccompanied and separated children will not understand their options and rights when it comes to biometric data. In general, refugees regularly do not have a real choice but to provide data if they wish to receive assistance. For example, UNHCR staff in Ethiopia reported that beneficiaries who refuse to share biometric data during the registration process are told that they risk losing assistance. Because the provision of biometric data is seen as a prerequisite to accessing lifesaving assistance, it is unsurprising that UNHCR barely witnesses any refusals (Hayes, 2017; O'Donovan, 2015; Walkey, Procter & Bardelli, 2019). Accordingly, Kaurin's (2019) study on refugee arrivals in the EU found that meaningful informed consent for the collection and processing of biometric data is rarely sought. Most refugees cannot provide informed consent because they do not understand what asylum status entitles them to and what will happen with the collected data (Kaurin, 2019). Research about digital IDs in Bangladesh also found that Rohingya refugees displayed low levels of understanding about the purpose of biometrics, with ideas ranging from "viewing it as a standard UNHCR practice to being told that the iris scanners were checking for eye diseases" (Maxwell, Rahman & Baker, 2019, p.7).

5.5.2. Constitutive Effects and Issues of Access to Digital Data

To understand the implications of the humanitarian turn towards biometric technologies, it is key to explore biometrics not simply as a means to a predefined goal but rather as having constitutive effects. In doing so, we move from considering technology as a tool to thinking about the harmful side effects that technologies can produce in humanitarian contexts. More than anything else, humanitarians' use of biometrics constitutes new forms of risk. These risks predominantly relate to actors with non-humanitarian aims accessing biometric data. By definition, refugees are at risk as to qualify for refugee status means someone has a well-founded fear of persecution. Volker Schimmel, UNHCR's Head of Field Office in Amman,

also said that those fears apply to Syrian refugees because “there was, at least on the official propaganda side, a big push by Syrian authorities to pursue refugees as traitors to the regime”. Therefore, Syrian refugees have voiced concerns over retribution in exile or at home, if they still have family members in Syria (O’Donovan, 2015). Besides risks related to the Syrian regime, close cooperation between UNHCR and host governments has also caused concerns among refugees. Numerous host governments have tried using humanitarian dependence on their permission to operate in a given country as leverage to access biometric data. Such disputes transpired, for example, in Kenya, Lebanon, and Malaysia. In Malaysia, the government asked for access to UNHCR’s database to ‘close loopholes’ that might allow individuals sympathetic to the Islamic State to enter the country (Jacobsen & Fast, 2019, p.162). One can imagine that European intelligence agencies would also like to obtain such data (Staton, 2016). Beyond host government pressure to share biometric data, it can also be targeted by hackers (Jacobsen & Fast, 2019). For example, the hackers’ collective Chaos Computer Club broke the iris recognition system of the Samsung Galaxy S8 in 2017 using a laser printer and a contact lens (Redfish, 2018).

In response to those concerns, Schimmel acknowledged that UNHCR has limited budgets compared to entities that might be interested in UNHCR’s data. Yet, he emphasizes that the EyeCloud server “is extremely good on the security side, not just in terms of encryption, but its overall architecture of a ‘trust no one’ design” (Redfish, 2018). In contrast, critics noted that trust is a central feature of the EyeCloud server as it is proprietary software, which holds an invisible source code that could generate a so-called ‘backdoor’. If the developers of a proprietary software create a backdoor, they can enter the system and its data (Redfish, 2018). Whereas UNHCR trusts the EyeCloud team, privacy advocates are highly suspicious of IrisGuard due to the profiles of members of its advisory board. Richard Dearlove, director of the British Secret Intelligence Service from 1999 until 2004, participates in the advisory board. Another well-known member is Frances Townsend, Homeland Security Advisor of United States President George Bush from 2004 until 2008 (Jacobsen, 2015a). The risks of data falling into the wrong hands are worsened by the fact that biometric data establish permanently identifiable records. Unlike a stolen password, it is impossible to change your fingerprints or irises, which means that a single breach could keep the user vulnerable for a lifetime (Rahman, Verhaert & Nyst, 2018).

The insight that technology's constitutive agentic capacity might harm refugees if their data would be used for other purposes than humanitarian protection also confirms that responsible data ownership is becoming increasingly important in aid operations. In other words, conceptualizing technology as capable of 'agentic capacity' demonstrates that humanitarian protection no longer simply concerns safeguarding access to vulnerable groups. Instead, UNHCR's collection of sensitive and easily shareable digitalised information means that the organisation must also look at access in terms of prevention, and more specifically, the prevention of non-humanitarian access to the biometric data of its beneficiaries (Jacobsen & Fast, 2019). The increasing role of digital technologies in humanitarian operations has implications for UNHCR as the organisation must now protect the humanitarian subject digitally. Correspondingly, UNHCR's Senior Data Protection Officer noted that "data protection is part and parcel of refugee protection" (Beck, 2018). However, there is little transparency on UNHCR's data protection decisions in most crises due to a lack of relevant legislation. Yet, in 2015, UNHCR's internal audit exposed security flaws in how UNHCR Jordan managed its CTP (O'Donovan, 2015). Comparably, recent regional evaluations found that actions such as sharing documents containing sensitive information via email without encryption are common, possibly exposing data to privacy breaches (Ladek, 2019, p.32).

Apart from seeing technology as constituting risks, the proliferation of biometrics in humanitarian settings portrays those technologies as reliable or authoritative. In other words, humanitarians contribute to the acceptability of controversial technologies and "bolster their potential governance effects beyond the humanitarian setting" (Jacobsen & Fast, 2019, p.S158). In this line of thought, corporations such as IrisGuard benefit from being included in aid operations because it improves their reputation and they can trial new technologies in poorly regulated areas. Correspondingly, Imad Malhas, CEO of IrisGuard, said that his company provides its technology to UNHCR free of charge. Yet, he ascribes "significant nonmonetary value to IrisGuard serving refugees through ... demonstrating the quality of its technology's applications" (Berfond & Adrian, 2019, p.28). Furthermore, IrisGuard deducts a one per cent transaction fee every time someone scans his or her irises to withdraw money or to buy groceries. This means that UNHCR allows IrisGuard to profit from refugees and allows the company to test their applications on a large scale, knowing that refugees rarely question biometrics (zur Nedden & Dongus, 2017). Another good example that demonstrates this issue is the case of drones, where the 'humanitarian' label is valued greatly as the product is

controversial and the humanitarian setting offers an accessible site for experimental testing (Sandvik & Lohne, 2014).

Whereas critics of biometric systems predominantly focus on the implications of including people in a database, constitutive effects can also relate to biometrics driving social exclusion or even statelessness (Hayes, 2017). The use of biometric registration implies that to be entitled to aid becomes synonymous to being registered digitally. Subsequently, unregistered refugees may be disenfranchised, which is problematic because there is a large number of unregistered refugees in Jordan. This category includes people “who did not think that they would be in Jordan long enough to register, those who choose not to register for fear of security or political repercussions, those who do not know how to register, and those who have difficulties travelling to a registration centre” (Healy & Tiller, 2013, p.24).

VI. Concluding Discussion

This thesis aimed to study the features and effects of biometrics in aid operations through analysing UNHCR Jordan's CTP for Syrian refugees. The first part of the analysis identified three features of UNHCR's CTP in Jordan. First, UNHCR's public-private partnership with CAB and the biometrics company IrisGuard created the programme. Second, the CTP depends on the EyeCloud, an encrypted network that IrisGuard developed for UNHCR to store the biometric data of refugees with greater security. Third, the CTP expanded into the CCF, a platform that allows UNHCR and other humanitarians delivering cash assistance in Jordan to pool funds. These features relate to Barnett's concept of humanitarian governance as the public-private partnership displays diversification of the humanitarian field. The concept's emphasis on paternalistic tendencies in humanitarianism also shows in UNHCR's authority as UNHCR Jordan decides who is entitled to aid. UNHCR also functions as the chief representative of refugees globally so UNHCR can decide what is in the best interest of refugees.

The second part studied the implications of UNHCR's CTP for accountability. For upward accountability, benefits include lower overheads, preventing fraud, and providing donors with detailed reports. For downward accountability, biometrics ensure fair distribution of resources and drastically reduce waiting times. For UNHCR's accountability to its mission and partners, biometrics save time and resources, boost accuracy, reduce fraud, ease audit requirements, and ensure low bank fees. While biometrics advance speed and accuracy, technical problems with CAB's iris-enabled ATMs hinder downward accountability. Moreover, beneficiaries might prefer cards over iris scans to withdraw cash but they cannot choose between these options. Downward accountability is further hampered since UNHCR does not include refugees in its decision-making process about biometrics, as well through the fact that biometrics offer accountability checks at the downstream part of the supply chain, while the biggest problems regarding fraud appear upstream. These notions imply that UNHCR's perspective on biometrics neglects the possibility that refugees do not automatically benefit from those technologies. Another possibility is that UNHCR intentionally neglects the problems for downward accountability because of the advantages for upward accountability.

The third part of the analysis explored the implications of biometrics using the concept of humanitarian technology governance. This section revealed that the urgency of humanitarian situations validates the deployment of experimental technologies, which are not accepted in

developed countries. Syrian refugees in Jordan also noted that the iris scanners cause pain, which calls attention to the potentially harmful side effects of biometrics. In connection with this, UNHCR reinforces the power dynamics of the sector by not obtaining consent from refugees before the collection of biometric data. Beyond the violations involved in subjecting vulnerable people to a system without their consent, UNHCR does not communicate basic information about its biometric procedures. One might also wonder what informed consent truly means in humanitarian contexts if refusing consent is seen as refusing assistance. Besides the potentially harmful side effects and the power dynamics that are inherent in humanitarians' use of biometrics, UNHCR's data could also fall into the wrong hands. In the Jordan case study, privacy advocates doubt particularly the motives of IrisGuard due to its linkages with the security industry. This risk is worsened by the non-revocability of biometrics and the lack of a data protection framework in Jordan. Consequently, UNHCR's protection mission no longer solely relates to accessing vulnerable individuals but also contains the need to deny access to biometric data. A further danger is that humanitarians' use of biometrics ends up delivering 'perfected' and normatively acceptable technologies of power.

The findings of this thesis indicate that UNHCR's widespread implementation of biometrics has created new challenges for the organisation in terms of data protection. Moreover, humanitarian independence might be compromised through partnerships with the private sector, including the security industry. Essentially, the adoption of biometrics in crises also reinforces the power dynamics that are engrained in the sector because data subjects are not asked for consent. This is mainly problematic since humanitarians would violate the 'do no harm' imperative if biometric data falls in the wrong hands and if the turn towards digital registration and biometric CTPs excludes those most in need.

Future research could explore how guidelines and policies related to biometric data protection are understood and utilized in aid operations and how perspectives on data protection might differ for humanitarian organisations. As one of the biggest critiques related to biometrics concerns informed consent, it would also be beneficial to study how understandings of biometrics differ within cultures and how humanitarians should work towards obtaining meaningful informed consent during the collection of biometric data for different groups of people. Likewise, it would be interesting to examine if the promise of biometrics to improve the inclusion of vulnerable groups is borne out in practice.

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