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QUANTIFYING VULNERABILITY: Humanitarian Datafication and the Neophilia of Integrated Power

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International humanitarianism has in recent years undergone an "innovation turn" (Scott-Smith 2016), utilizing new technologies—including drones, biometrics, e-cards, satellite mapping, and the like—to enhance the reach and efficiency of humanitarian aid. Beginning with the Innovations Fair organized by the Active Learning Network for Accountability and Performance in Humanitarian Action in 2009, the past decade has seen burgeoning support for new research units and initiatives across the United Nations (UN) and international non-governmental (INGO) world. In 2016, the World Humanitarian Summit affirmed "Transformation through Innovation" as one of its core commitments to reforming the aid industry, which referred not just to new technologies but also to new ways of framing humanitarian problems, new modalities for resource mobilization, and new partnerships with actors traditionally considered outside the humanitarian system. These efforts have been embraced by policy analysts who argue that the sluggish bureaucracy of international aid—which typically operates through public sector channels—can no longer meet the challenges of unprecedented global displacement and who call for harnessing the powers of the market to rapidly operationalize humanitarian solutions at scale (Betts and Bloom 2014). While many of these so-called innovations have been in use for years in other sectors such as

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public health, social welfare, and financial technology, humanitarianism's suspicion toward the profit motive as intrinsically antithetical to aid work has resulted in a technological "lag" behind other industries, such that debates about the material, institutional, and sociopolitical implications of technological innovation in humanitarianism remain relatively nascent.

This article addresses recent innovations in humanitarian vulnerability indexing: the systems used to record, measure, and classify vulnerability data among refugees. Drawing on ethnographic fieldwork among aid organizations working with Syrian refugees in Lebanon and Jordan, I explore how the growing datafication of refugees in humanitarian action poses new questions about not only the limits of quantitative ontologies but also their transformative implications for the institutional configurations of humanitarianism itself. Anthropology has long harbored a productive skepticism toward the use of quantitative metrics, building on science and technology studies (Beck 1992; Hacking 1990; Latour 1999; Porter 1995) to explore how quantification reduces complex socio-historical realities to abstract, measurable terms that reproduce racial, colonial, and geopolitical inequities while disguising these traces through sanctifying discourses of scientific objectivity and technocratic expertise (Benjamin 2019; Chun 2021; Escobar 1995; Ferguson 1994; Merry 2016; Riles 2006). Ethnographers of global health have also drawn attention to the uneven social lives of numbers and the material practices through which they are constructed and stabilized as evidentiary terrain for demographic interventions (Biruk 2018; Davis 2020; Ruckenstein and Schüll 2017). In the field of critical (big) data studies, anthropologists have critiqued what Gavin Smith (2018) calls "data doxa"—the enculturation of data habitus and infrastructure as integral to contemporary notions of progress, pleasure, and self-expression in everyday "datafied" life (boyd and Crawford 2012; Michael and Lupton 2016; Nafus and Sherman 2014; Ruckenstein and Pantzar 2015). At stake in much of this scholarship is a neo-Foucauldian view of data as an instrument of biopolitical governance, neoliberal subjectivation, and the disciplinary gaze, which others contend does not exhaust the ways in which data activism can mobilize existing data infrastructures toward more just ends (Baack 2015; Kennedy 2018). More recently, however, anthropology has sought to move beyond critiques of data's representational claims to ask what data does, and how concept-metaphors such as "broken," "rotted," or "repaired" data prove equally constitutive of its material logics (Boellstorff 2013; Douglas-Jones, Walford, and Seaver 2021; Pink et al. 2018).

The adoption of data-intensive technologies in humanitarianism presents a unique challenge for these debates, because the beneficiaries of humanitarian

programs are not politically positioned as consumers in a data marketplace or as rights-bearing citizens of a welfare regime, although there are important convergences. Indeed, the moral exceptionalism and engrained minimalism of humanitarianism's life-saving mandate allows many of its innovations to merit lower standards of critical scrutiny and regulatory approval, leaving aside questions of privacy, consent, or long-term sustainability. At the same time, while the asymmetric powers exerted by data-mining government agencies and private corporations are well charted in the literature, it is less understood how datafication conscripts, entangles, and unsettles data practitioners themselves. This article heeds the call by Kristin Sandvik and colleagues (2014, 222) to move "from a discussion of what technology does for humanitarian action to asking what technology does *to* humanitarian action." Taking humanitarian aid workers as my primary interlocutors, I approach the aid industry as a heterodox assemblage comprising a panoply of institutional actors, each of whom are differently implicated in the circuits of data collection, classification, and utilization in humanitarian program design. By telescoping outward from the ethnographic moment of refugee assessment, to the datasets that determine which refugees are assessed, the transfiguration of vulnerability into algorithmic values, the retrenchment of targeted aid on the basis of those values, and the broader ecosystem of interlinked data systems into which vulnerability indexing feeds, this article shows how the datafication of humanitarianism adds successive layers of abstraction that precipitate a growing integration and centralization of humanitarian power.

ENCOUNTERS WITH A DATA BUREAUCRAT

On a sunny July morning, I met with Mahmoud, a young Syrian aid worker, at his INGO's field office in Kouaikhat, a small town in Lebanon's northern governorate of Akkar.[1] Mahmoud was tasked with conducting household vulnerability assessments among Syrian refugees and had agreed to take me along. On this day, we were scheduled to visit Wadi Khaled, an area adjoining the Syrian border to the northeast, which required special entry permits from Lebanese military intelligence as it lay beyond the government's checkpoint at Akroum and was effectively open to Syrians fleeing from the north. Wadi Khaled was an especially impoverished corner of a region already straining to support more than 240,000 refugees, with scant access to resources, infrastructure, and services. INGOs routinely sent out teams to conduct vulnerability assessments among Syrian families to document their living conditions and determine their eligibility for targeted assistance programs. The government's prohibition on UN-managed refugee camps—owing

to its troubled history with Palestinian refugee camps—had forced Syrians to disperse into informal settlements all over the country, and assessment teams had to cover large swathes of territory to reach them. The INGOs thus maintained a steady fleet of drivers and rental cars, shuttling staff between their headquarters in Beirut, their field offices, and refugee settlements across rural towns and farmlands.

We set out from Kouaikhat early in the morning, hoping to complete the daily quota of households by mid-afternoon when all NGOs were required by the military to exit Wadi Khaled. We rode in a white SUV with the INGO's name emblazoned on the door and a decal on the back affirming that the car's occupants were unarmed. Mahmoud struck me as a quiet, reserved man who kept his conversations pointed and brief. Although a refugee himself, he had legal residency in Lebanon and had never faced any problems with local police. He had worked in a hospital back in Syria, he told me, and was expecting to soon be resettled in Spain. As an educated, middle-class man with secure employment and resettlement prospects, Mahmoud belonged to a small minority of Syrians in Lebanon who were relatively protected from the government's routine harassment of refugees. As far as the refugees he assessed were concerned, he might as well have been Lebanese. Indeed, Mahmoud seemed the archetypal aid professional I'd often met in INGOs, someone who saw humanitarian work as a job like any other, with strict guidelines to be followed and targets to be met. The purpose of an assessment, he explained, was to record information on refugees. Name, birthdate, phone number, nationality, location, number and age of family members—everything had to be recorded. Previously assessed families also needed to be revisited to update their records, as chronic debt and regular evictions compelled them to move houses frequently or return to Syria. Moreover, children who got married and moved out of their parents' homes were designated as a separate household, requiring fresh assessments. Maintaining updated records thus represented a major logistical challenge for aid organizations seeking to identify beneficiaries while on tight project timelines.

We trundled along the Syrian border, driving past dilapidated buildings, mounds of rubble, and rusting agricultural equipment. Wadi Khaled gave the impression of being frozen midway into construction, with streets half paved, homes left unpainted, and iron girders for abandoned buildings jutting starkly into the sky. Countless "informal tented settlements"—as the INGOs called the makeshift homes of Syrian refugees—dotted the landscape, serving as a reminder of the devastating war waged right across the border. Perhaps *tent* is the wrong word, for most of the accommodations Syrians lived in were assembled from an assortment

of construction materials—wood, tarpaulin, blankets, and prefabricated cinderblocks. Some had mud floors while others had concrete; some featured solid walls while others just had a cinderblock foundation with tarpaulin sheets held together by wooden frames and nylon ropes. Most lacked a proper roof, which proved a major problem during heavy rains. Each home told a different story about its occupants—what income they managed to earn, what assistance they received from neighbors and NGOs—but all these homes testified to the poverty of Syrian refugees who had left behind families, livelihoods, and savings to escape to safety.

Presently, we parked beside an unfinished concrete building and stepped out. Mahmoud called out to announce our presence, giving women in the household time to cover their heads while a middle-aged man stepped out to greet us. After introducing ourselves, we were beckoned inside and sat down on floor cushions. The man offered us food, but Mahmoud refused, explaining that aid workers were prohibited from eating with refugees. We did, however, accept tea, a sugary black drink commonplace in Syria. An old TV played an Indian serial in the background—something I often observed on such visits—as our vulnerability assessment began. Mahmoud asked to see the family's asylum-seeker certificate issued by the UN High Commissioner for Refugees (UNHCR), as he whipped out a Samsung tablet and began logging information into a data-input app. Some entries required rating quality on a scale of 1 (lowest) to 5 (highest), while others offered, rather discordantly, a selection of smileys to rank respondents' opinions from happy to sad. *Keif al-hal* (how are you), Mahmoud asked the man without looking up. *Kwais* (good), he replied. I glanced over at Mahmoud's tablet and saw that he gave the household a 5/5 on the scale ranking "dignity," based simply on that reply. The questions continued: Do you work? Did you receive financial or medical assistance last month? How much did you spend on food? How much did you spend on medicines? How many kids do you have? Do they go to school? Mahmoud gruffly instructed the family members to give accurate answers and state clearly what they did and did not have. They often looked confused, as if unsure about how to answer the questions, but Mahmoud busily tapped away on his tablet. When the questionnaire was complete, we got up and walked around the house, inspecting each room: the piping in the bathroom, the sealant on the roof, the state of the motorcycle outside. I often noticed Mahmoud recording answers to questions he never asked the family, such as the household's quality of "safety" and "privacy." Again, the family received a glowing 5/5 rating on all counts. After around forty-five minutes, we were done. Mahmoud made it clear that he couldn't promise them any assistance. We bid our goodbyes, got back in the car, and left.[2]

As we were heading back, Mahmoud explained that his questionnaire was designed to elicit only factual information with "yes" or "no" answers. Qualitative descriptions such as the condition of an object, he said, should be absolutely avoided. I asked him about the answers he had recorded on his tablet to questions he never asked. He replied that he could input some data based simply on his own inspection. If a family did not share their home with another family, for instance, they were deemed to have privacy. If the landlord had not threatened them with eviction, they were designated safe. In other words, the Syrians being assessed did not always know why they were being asked certain questions, how their answers were being translated into the data-input form, or what ratings those answers received. Yet, Mahmoud insisted, *I only write what they say.*[3] *Then I send this information to my manager. I don't know what they do with it; it's not my business. If my organization decides that this family should receive shelter assistance, a rehabilitation team follows up with them to install doors and windows, repair the bathroom, set up electricity connections, etc. Other teams may follow up for their own interventions.*

Not all aid workers might share Mahmoud's rather procedural approach to shelter assessment. However, the process of rendering vulnerability commensurable and indexical ushered forth a series of humanitarian transactions that not only translated nebulous sensibilities such as dignity and privacy into discrete data points, but also tethered Mahmoud as a data bureaucrat to the promise of a perfectly gridded universe ordered along a numerical five-point scale, or even by smileys. To paraphrase Joël Glasman's (2017) play on James Scott's (1998) *Seeing Like a State*, Mahmoud had learnt to "see like a refugee agency." It is not surprising, then, that he seemed so intent on getting the "right" answers: refugees' subjective testimonies would not help his programmatic objectives, while their ceaseless movement in search of housing and livelihood constantly rendered his data obsolete. Indeed, one could argue that the precarious nomadism of refugee life was itself the "problem" for which the proceduralism of the vulnerability assessor—invested in the process rather than the outcome—provided but a temporary answer. In a sense, Mahmoud's work emblematized what much of bureaucratized aid looks like today: a "dead zone of the imagination" designed to manage social situations founded on structural violence (Graeber 2015).

THE ADHOCRACY OF NUMBERS

Humanitarian aid was not always anchored to an impartial and universally commensurable category of vulnerability. As Glasman (2020) recounts, early humanitarianism was driven by a deeply phenomenological response to individual

pain, and it was not until the institutionalization of aid in the mid-twentieth century that *needology*—what Glasman (2020, 28) defines as "the global bookkeeping of suffering"—became programmatic orthodoxy, borrowing from the developing science of statistics, demography, public health, and political economy among European welfare states. Aid organizations under the mandate of the newly established UNHCR recast themselves as expert purveyors of data, transmuting the meaning of "humanitarian impartiality" from the Red Cross's commitment to provide relief to all parties in a conflict to an objectivist principle of aid distribution based on a quantifiable metric of minimum needs (Glasman 2020). The arrival of digital bookkeeping arguably represents the apotheosis of this process of datafication.

Household vulnerability assessments such as the one conducted by Mahmoud's INGO feed into a larger vulnerability indexing system in Lebanon known as the Vulnerability Assessment for Syrian Refugees (VASyR), a survey jointly launched by the UNHCR, the World Food Programme (WFP), and the United Nations Children's Fund (UNICEF) in 2013 to collect, classify, and compare vulnerability data among a sample of urban refugees. Prior to VASyR, each aid organization conducted its own assessments, and no standardized criteria existed by which to integrate and harmonize their datasets. Even the term *vulnerability*, while common in humanitarian parlance, was used as a vague surrogate for poverty or exposure to risk—often in correspondence with idealized concepts of the "deserving refugee" (Bardelli 2022)—and lacked a precise actionable definition to guide program design. VASyR provided policymakers with a quantitative formula to rank refugee households in terms of vulnerability scores—from "low" to "severe"—which could then be used to project a comprehensive national overview of refugee vulnerability and prioritize the neediest families for targeted assistance, such as cash vouchers and shelter rehabilitation. The UNHCR developed a similar vulnerability indexing system in Jordan known as the Vulnerability Assessment Framework (VAF); for reasons of space, I do not discuss VAF in this article, but it is sufficient to note that both systems shared similar functions and methodologies. While targeted aid is not new to humanitarianism, quantitative vulnerability indexing was billed as an innovative data-driven system that would improve the accuracy of targeting methods, enhance coordination among INGOs, and facilitate more geographically focused interventions.

The reliance of aid organizations on ever more sophisticated architectures to store, analyze, and share data, however, invariably intensifies concerns about the fidelity of the primary datasets that undergird them. When data comes to represent the notional promise of knowledge that is accurate, transparent, and reliable,

the practice of data collection becomes freighted with anxieties around what is *not* known, around what exceeds the "data episteme" (Koopman 2019). Anthropologists have challenged the negative ontology ascribed to non-knowledge as a mere absence of knowledge, gesturing to the myriad ways in which ignorance, doubt, skepticism, and mistrust are equally constitutive of social action (Kirsch and Dilley 2015; Mair, Kelly, and High 2012; Pelkmans 2013). Whereas an intellectual suspicion of quantification may breed fatalistic indifference to the representational adequacy of numbers, aid practitioners in Lebanon instead grappled constantly with *how* accurate their data was. Questions of who was eligible for household assessments, who could be reached for one, and how fairly their data was recorded all impacted the feasibility of their programs.

Early in the Syrian crisis, security concerns around routine clashes in the border regions of Lebanon such as Arsal excluded those areas from being surveyed by VASyR (UNHCR, WFP, and UNICEF 2013). More importantly, VASyR was only stipulated to survey registered refugees—those who had received refugee certificates from the UNHCR—which excluded a significant number of refugees from being assessed, let alone assisted (Janmyr and Mourad 2018). At one point, the gap between the UNHCR's official registry and its estimate of refugees in the country was as high as half a million, due in part to the Lebanese government's harsh anti-integration policies designed to drive Syrians out of legal status (Government of Lebanon and UN 2017; Naylor and Haidamous 2015). Many refugees also refrained from registering with the UNHCR for fear of being caught without government-issued residency permits and deported. Therefore, as is often the case with displacement crises, who got counted as a refugee remained a resolutely *political* problem (Allen et al. 2018; Zetter 1991).

Even among refugees who were registered and eligible for assessment, conducting household visits in one of the world's largest urban displacement contexts posed innumerable obstacles to data collection. Megan, an information management officer with Medair Lebanon, explained the process to me in detail:

> Right now, when I do a Household Profiling Questionnaire (HPQ) for new households that haven't received an HPQ, I'm asking UNHCR for a list.[4] I ask them for a list of households within a geographical area in which I'm working. . . . I sort through the list, and the first thing I have my staff do is cold calls. We call everybody on the list, try to figure out where they're located, because the location is the hardest thing within urban settings. . . . But honestly, most of these numbers aren't right. If I receive a list of about four

> hundred names, we're likely to get through to a hundred. . . . Not all refugees have phone numbers, half the time they're providing a number of a neighbor or, in some cases, their landlord. They're sharing numbers as well. So it's very hard to find the person you're trying to get to on the other end of the line.

Megan's emphasis on the challenge of tracking refugees in urban settings recalls the rationale often proffered by humanitarians for why they prefer to work in camps. The concentration of refugees into discrete zones simplifies the logistics of aid distribution and makes refugees easier to monitor and record. In contrast to Jordan's encampment policies, the spread of Syrians across urban and rural settlements in Lebanon presented humanitarians with not only a crisis of visibility but also a crisis of *data*. Out of a list of more than 500 households in May 2016, Megan and her team managed to schedule just 117 household assessments and enrolled only 41 for cash assistance. Depending on the project's programming budget, Megan said, they would keep mining more lists and processing more beneficiaries until they eventually ran out of funding. The whole process appeared rather ad hoc for what was meant to be a data-driven system, but as Megan remarked, aid workers never had enough resources to meet their targets anyway. Even after filtering out all the unregistered and unreachable refugees, the magnitude of needs always outstripped humanitarian capacities. At the end of the day, she said with a shrug, her job started to look like just a "numbers game." Elizabeth Dunn (2017) suggests that critiques of humanitarian aid as an oppressive regime often overstate its organizational scope and efficacy, and draws on the term *adhocracy* to refer to the partial, incoherent, and improvisational modus operandi of aid bureaucracies that produce as much chaos as they do order. While technological innovation is often promoted as a rationalizing agenda for the industry, its failures are ultimately cloaked in the same adhocratic invocations of humanitarian minimalism where, as the mantra goes, "something is better than nothing at all."

LIVING WITH THE ALGORITHM

A common refrain among aid workers is that the quality of humanitarian data is only as good as the data collected. Megan put another spin on this by adding that "the data collected is also only as good as the data programmed." Despite accounting for exclusions in the population sample selected for household assessments, the formulation of standardized questionnaires could lead to major inaccuracies with the UNHCR's vulnerability indexing system. Apocryphal stories and rumors abounded among aid workers about acutely vulnerable families being

designated as "mild" while others rolled up in BMWs to encash their vouchers. Certainly, unclear phrasing and mistranslations could impact vulnerability ratings. For instance, open-ended questions with numerical answers, such as "how much water does your family use per day," were subject to different interpretations: does water refer to drinking water, bathing water, or water usage overall? A more telling example was offered by Rania, who worked with Action Against Hunger (ACF) to implement WFP's e-card food voucher program in south Lebanon:

> Through the assessment, they even measure how many kilos of sugar you [use]. In Syrian culture, they like tea with more sugar. . . . According to the WFP nutritionist, sugar is not the main food item that you should have each day. You should have fruits, vegetables, protein, some carbohydrates, and sugar is not in these groups. They consider sugar not important, so they consider cases [where refugees can afford luxury items like sugar] as mild, not severe.

The WFP's cultural misperceptions around the dietary habits of Syrian refugees were disguised by the quantification of responses in the final result. This was the problem, Rania argued, with vulnerability assessments that focused exclusively on numbers, not narratives: "Did you eat a potato? Yes. Did you eat dairy products? No. So one, zero, zero, one, zero, one. At the end you have a score, and this score can measure your situation. It's not logical!" In other words, the prospects for a Syrian family being deemed vulnerable enough to receive assistance depended entirely on an abstract quantitative algorithm piloted on an experimental basis, derived from a statistical survey that sampled no more than 2.5 percent of registered refugees whose reliability was based on an inexorably subjective and interpretive exchange with a vulnerability assessor (UNHCR, WFP, and UNICEF 2016). The more that vulnerability became an algorithmic value in humanitarian programming, the more its integrity hinged on that critical *human* encounter of data collection, in which an inscrutable permutation between a refugee's answers and an assessor's interpretations—imperiled by professional incompetence, cultural misunderstandings, or even simple mistranslations—decided whether a roof was repaired or an eviction was prevented. This form of "algorithmic violence," as Rocco Bellanova and colleagues (2021, 144) point out, bears a co-constitutive relationship with datafication: it is "often implied in the very making of the data infrastructures needed for algorithms to work."

Not everyone in the INGO world saw an intrinsic problem with this system. Megan's team regularly cross-checked the results of the UNHCR's formula against their own scoring methodology and rarely found any discrepancies. Instead, she chalked up inaccuracies in scoring to improper data collection. Vulnerability assessments with a family of two or more members required at least twenty minutes, she said, and data from shorter household visits should be summarily discarded. Yet, due to the sheer size of the beneficiary lists and the difficulty of locating refugees, aid organizations often struggled to meet their monthly assessment quotas. Some took to conducting assessments via telephone, which relied entirely on self-reporting by refugees and eliminated the assessor's observations altogether. However, if there was one aspect that no quantitative approach could capture, it was the authentic *feel* of vulnerability that would validate whether an assessment score was accurate. As Pieter, a senior representative for Medair's Jordan office working with UNHCR's VAF system, explained:

> One of the things that we have concluded, based on our experience, is that just an algorithm and a score doesn't work. Why is that? Because there are things that are just not captured in an algorithm or in a system in general. There are things that can be assessed objectively, like the number of people in the household, and the amount of money they are paying, assuming that people tell you the truth. That makes it easy to compare. There is a question like, "How many pieces of furniture do you have in your house?" That's also a very measurable thing and you can as an assessor go and see it. But there are other things, like an overall feeling of a house—like, is this furniture looking brand-new or worn out?

Medair and other INGOs like it compensated for these weaknesses by appending supplementary questions to the assessment questionnaire and, in addition to objective metrics, recording the assessor's overall impression of a household at the end of the form. This approach was also, however, intended to guard against another problem aid workers frequently complained about—that refugees allegedly misled assessors to get a higher vulnerability score, by for instance temporarily moving to a poorer accommodation or hiding expensive appliances during a household visit. Assessors received continuous in-house training to improve the accuracy of the qualitative data they submitted, which specifically involved searching for telltale signs of "manipulation." Pieter elaborated further:

> [Assessors] need a lot of training on sort of the *psychology* of the assessment. For instance, if you go into a house and it looks pretty poor, but you see that two of the rooms are actually locked, and you ask, "Why is it locked," and they go like, "Ah, well it's always locked, there's no key," that's a red flag. That's most likely where the plasma screens and so on are stored. For me, I'm glad for them to have them, I'm very happy. It's just, the question is, there may be people who are in bigger need, so yeah, we may not decide to support you on this. I don't want to be judgmental on what they have. I wish them all to be living in palaces . . . [But] if the person is not giving you a straight answer, but sort of showing signs of doubt, what are these signs, how does a person communicate verbally and nonverbally?

Vulnerability assessments thus resembled a cat-and-mouse game for humanitarians, a quasi-improvisational dance between refugees with a supposed propensity for lying and assessors probing for some primal truth about vulnerability. This studied hermeneutic of suspicion toward refugees has a long history in humanitarian practice, framing them as unreliable witnesses to their own condition and in need of constant moral supervision (Daniel and Knudsen 1995; Feldman 2018; Harrell-Bond 2002).[5] Despite Pieter's efforts to fill the gaps in quantitative indexing with impressionistic narratives, what both methodologies shared was a presumption of stabilizing the unruly semantics of refugee life through data, conferring on assessors a superlative authority to authenticate vulnerability as a symbolic property and interpellate it within the conceptual grids of humanitarianism. And yet, humanitarian investments in the epistemic virtues of data are ultimately never fulfilled. Rather than alleviating suspicion, the vulnerability assessment—to quote Taras Fedirko's (2021, 84) examination of financial forensics—*produces* it as "both a method and a 'mood'; both a technique of working through opacity and uncertainty to generate understanding and a stance on the limits of this understanding." Every word and gesture can be ushered into its fold; every locked door that cannot be adequately explained, or a casually uttered *kwais* that betrays an unintended meaning, can be made relevant to its exercise. In this sense, vulnerability assessments can perhaps best be described as a terrain of semantic struggle over the sovereign meaning of data itself.

In a final stroke of irony, the WFP and its partner INGOs abandoned household visits altogether after 2016 and switched to an econometric "desk formula" based solely on demographic data gathered by the UNHCR during its refugee registration process (LCC 2017). The transfiguration of vulnerability into a

computational equation was now complete. "Deservability" for hundreds of thousands of people could be instantly calculated with all the convenience and efficiency of a cybernetic system.

THRESHOLDS OF INCLUSION

The self-fulfilling prophecy of algorithmic violence became particularly clear when a quantitative indexing tool intended to improve targeted assistance was later used to retrench assistance instead. In 2015, funding constraints forced the WFP to slash the value of its food vouchers in Lebanon from US$27 per person per month to US$19, then further down to US$13.50, with a cap of five persons per household (WFP 2015b). It also cut its beneficiary pool by over 125,000 refugees from August to September 2015 without conducting new assessments. The WFP's (2015a, 2) Situation Report for September explained that it "regrettably knows that those individuals belong to households which are not the most vulnerable, therefore their needs are expected to be managed by the overall household," while simultaneously admitting that 70 percent of Syrian households were living below the poverty line.[6]

As frontline agencies for the WFP's food voucher program, INGOs like Action Against Hunger (ACF) were responsible for assessing beneficiaries for eligibility, distributing e-cards, and operating hotlines to deal with complaints. ACF's phones started ringing off the hook as the WFP's cutbacks kicked in, Rania said, because Syrian refugees who had previously received cash assistance were abruptly informed by SMS that their support would be terminated within two months. They received no explanation about why they had been deemed ineligible or when their assistance would resume, and ACF hotline operators had no answers to give them. Worse yet, once designated as mildly vulnerable or less, refugees could not only be disqualified from food vouchers but from a whole host of other assistance based on the same vulnerability scores. Rania shared the anguishing experience of dealing with callers excluded from the food-voucher program:

> Each month when we send the SMSes for the active beneficiaries, the excluded call again, [saying] "Why didn't you let me be included in the program, I have a difficult situation, I have many kids under two, I have elderly people, I have a pregnant woman, I have a health problem, I can't pay for my rent, I can't pay for my residency." Each month, each month, each month! And maybe some beneficiaries call two, three, four times per month, with the same question, with the same request. And lately, they start to say, "Come

> and see my situation, come to visit me, and you can see in reality what we have, how we live." . . . [But] it's not our decision. We are partners, we are working in the field to visit you or to help you, to support you, but in the end, we have some monitor who decides all this. We can't even promise [you] that we can talk about your situation, we can't promise that we can visit you again, unless we refer those cases to WFP. And if WFP has a strategy to visit those people, they can send us the list to visit.

Syrian refugees understandably experienced ACF, the WFP, the UNHCR, and other international organizations as part of the same corrupt system that had unfairly denied them assistance. They often referred to all INGOs as *al-umam*, the Arabic shorthand for the UN. For Rania, however, ACF was stuck in the unenviable position of an intermediary between the UN and Syrian refugees: it had to collect vulnerability data from refugees to build the dataset for the WFP's targeted assistance program, but it had no control over how the WFP used the data or who eventually received assistance. ACF staff conducting household visits would often be blamed by families that found themselves inexplicably excluded, while the INGO's entreaties to the WFP and the UNHCR about inaccuracies in their vulnerability scoring were ignored or dismissed. UN agencies seemed to place greater faith in the unassailability of their own technical instruments than they did in the direct field experience of the organizations implementing their mandates. There was no accountability in the system, nowhere to appeal against an improper assessment, no one to petition against a wrongful exclusion.[7]

Pleading into the void without guarantees of a remedy is perhaps archetypal in a humanitarian economy that continues to operate through the idiom of the "gift" (Bornstein 2012; Fassin 2012), but it also underscores how far international aid has come to resemble the opacity and facelessness of a bureaucratic machine. More than this, Rania's story also reveals how datafication reconfigures relations *within* the humanitarian system, vesting UN agencies with expanding powers of regulatory oversight over how data is used and with whom it can be shared. In order to access beneficiary data, NGOs are required to file voluminous contractual paperwork and abide by term-limited data-sharing agreements with the UNHCR, and even then, they aren't necessarily permitted to review the proprietary formulae used to calculate vulnerability scores. Paperwork invariably requires significant staffing and technical capacity, which disadvantages under-resourced Lebanese NGOs that have a longer and deeper history of engagement with the communities they serve, including Palestinian refugees exiled in the country for decades. While

structural inequities between North and South institutions have existed since the establishment of the global refugee regime after World War II, the creation of vast refugee databases and the centralization of computational processing wrests agency further away from local actors and consolidates sovereign control over aid policy in the hands of a few gatekeepers. Thus, what critics of big data call "data colonialism" (Couldry and Mejias 2019; Madianou 2019; Thatcher, O'Sullivan, and Mahmoudi 2016)—the accumulation by dispossession of digital capital—structures not only the extractive relationship between corporations and the datafied (refugee) subject but also, equally, the granular relations of power between data practitioners themselves.

In the end, the tragic grotesquery of vulnerability indexing lay not so much in the exclusions it produced, but in its steadily narrowing thresholds for inclusion. With so many thousands of Syrian refugees living below the poverty line, all of them could arguably be considered vulnerable. How then could any indexing system meaningfully compare the vulnerability of one family to another? Was a "female-headed household" with less debt more vulnerable than a male-headed one with more debt? Could a household with lower income be considered less precarious than a household with higher income and chronic illnesses? What was the measure of a vulnerable family worth helping, and how long could it forestall that dreaded SMS at the end of the month pithily informing them that they were, "regrettably," able to manage their own needs after all? Such quintessential questions of triage became inescapable as humanitarian funding gravitated to other crises around the world and aid organizations in Lebanon were forced to draw tighter and tighter lines of eligibility. Syrians could find themselves cut off from assistance while their friends and neighbors continued to receive it. Adult children could be disqualified if they got married and registered as a new household. Far from addressing refugees as a shared community of concern, vulnerability indexing thus had a profoundly *taxonomizing* effect. Since its inception, modern humanitarianism has been oriented toward the individual as its constitutive subject—the individual whose rights are violated, whose dignity is desecrated, whose body is maimed or killed (Slim 2015). Vulnerability indexing functions within this matrix as a disciplinary apparatus, lowering what Michel Foucault (1975, 191) calls the "threshold of describable individuality" and adjudicating the value of savable life. It thereby normalizes a shift in humanitarianism's ambit of biopolitical concern, from universalist categories of deservability such as "refugees" and "asylum-seekers" to vanishing subsets of "vulnerable" humanity (Sözer 2020).

TOWARD INTEGRATED DATA

This article has focused on the evolution of quantitative vulnerability indexing as a purportedly innovative approach to data collection and targeted assistance with Syrian refugees. As with all innovations, it is likely that the accuracy and efficiency of vulnerability indexing will steadily improve. Formulae will be refined, collection methodologies will grow more rigorous, and new technologies may be incorporated to track refugees more effectively and plug gaps in coverage. Such technical improvements, however, will likely further entrench power imbalances within the humanitarian sector, the implications of which are rarely evaluated in an industry driven by crisis imaginaries, emergency response times, and the minimalist expectation that "anything helps." The Vulnerability Assessment for Syrian Refugees (VASyR) was designed to work in conjunction with the UNHCR's refugee registration database, known as the Profile Global Registration System (proGres), which itself represented a revolution in mobile refugee registration when first tested in Turkey and Ghana in 2003. The proGres system replaced dozens of old, incompatible refugee registries with a centralized database and later introduced fingerprinting to prevent duplicate registrations (UNHCR 2004). Biometric registration was eventually enshrined in the Biometrics Identity Management System (BIMS)—first piloted in 2013 with Somali refugees in Kenya's Kakuma refugee camp—which synthesized iris, fingerprint, and facial scans across UNHCR operations to streamline case management, while the companion Global Distribution Tool used BIMS data to verify beneficiaries for targeted assistance programs (Lodinová 2016). The Syrian refugee crisis proved a watershed moment in the advent of humanitarian biometrics, as iris-scanning was deployed on an unprecedented scale in Jordan's refugee camps to replace WFP's e-cards with an ostensibly more secure method of dispensing cash "in the blink of an eye" (WFP 2016). Indeed, camps often serve as laboratories for new humanitarian technologies precisely because they offer unbridled access to target populations with uniquely low avenues for resistance.

The Syrian crisis also served as a testing ground to expand the Refugee Assistance Information System (RAIS), a web-based assistance management platform initially developed in 2009 to complement the work of proGres with Iraqi refugees in Jordan. RAIS allows humanitarian organizations to monitor expenditure patterns and coping strategies among refugees to identify avenues for intervention. In the early years of the crisis, aid workers would collect this data on clipboards and encode it manually in software for analysis, which cost a significant amount of time and prevented them from having an updated picture of existing needs.

RAIS established a mobile data collection system that seamlessly incorporated vulnerability data from VASyR assessments and consolidated datasets from different agencies into a single comprehensive database, allowing them to track each other's work in real time (Kelley 2017). It has since become the main coordination tool for humanitarian assistance in countries throughout the Middle East, conscripting more than 1.5 million beneficiaries, and is now being ramped up for use across the global South. In turn, RAIS is just one node in the UNHCR's chain of interlinked digital technologies known as the Population Registration and Identity Management Eco-System (PRIMES), whose purpose is to equip UN agencies with a suite of information and communication technologies to validate identities and assess claims to refugee status, assistance, and resettlement (UNHCR 2018). In other words, the datafication of humanitarianism engenders not only a deepening reliance on extractive data collection and algorithmic indexing but also the growing integration of discrete data systems into a centralized, inter-operable, and globally scalable *super*-system under the aegis of the most powerful and least accountable aid bureaucracies.

UN humanitarian agencies now rank among the largest data brokers in the world, maintaining enormous databanks of sensitive data on vulnerable populations in some of the most unstable regions of the world. Where accountability exists at all within the system, it is usually pledged to UN partners rather than to refugees whose data is collected, and pertains to the abuses rather than uses of the system. Scholars have thus raised alarm about the ethics of humanitarian datafication and its propensity to reproduce repressive structures of disciplinary surveillance and control over refugees (Dahler 2020; Iazzolino 2021; Tazzioli 2019). Btihaj Ajana (2013) in particular warns against the logic of "function creep" by which biometric applications initially devised for specific, exceptional domains gradually colonize the entire migrant/asylum body. One may expect such panoptic aspirations to be ill served by the fragmented and improvisational data-collection practices of humanitarian INGOs, yet it is precisely by *concealing* the adhocratic essence of data that the paradigm of datafication precipitates the ontological illusion that refugee bodies can be rendered wholly transparent to the panoptic gaze. The integration of humanitarian data thus poses risks for refugee rights not by the overdetermining reach of a totalitarian apparatus, but by the provisional and ultimately unreliable mythos of humanitarian technocracy.

Industry observers have meanwhile pointed to the grave dangers of notoriously poor cybersecurity protocols among aid organizations, and called for the appointment of an independent ombudsman to investigate incidents such as the

cyberattacks on UN servers in 2019, ransomware attacks on INGOs in 2020, and possibly the largest-ever security breach compromising the Red Cross's data on more than half a million people in 2022 (Rahman 2022; Raymond, Scarnecchia, and Campo 2017). Even apart from these lapses, the UNHCR's (2022) data-protection policy reserves the right to share personal data with implementing partners and third parties, while PRIMES is designed to be "interoperable with IT systems used by governments (mainly in the area of civil registration and population registries) and partner organizations" (UNHCR 2018, 2).[8] In other words, the potential repercussions of digitizing refugee bodies are not restricted to the humanitarian mandate alone, but extend to a panoply of political actors—including donor governments and asylum states—who are themselves party to the very conflicts that precipitate mass displacement. Conversely, refugees also serve as canaries in the coalmine for what forms of datafied power can be brought to bear on vulnerable communities in the global North (Martin and Taylor 2021), redolent of what Aimé Césaire (2000) calls the colonial "boomerang effect."

Data is thus set to become a new arena of contestation between the competing raisons d'être of sovereign power and humanitarian space. As Katja Jacobsen (2017, 536) argues, "rather than simply delivering better refugee protection, attentiveness to the technology's constitutive effects shows how with biometric refugee registration it becomes possible to extend—rather than guard against—the reach of state power through new means and into new domains of life." We are already seeing early signs of how these constitutive effects can reshape relationships between humanitarian actors and states. In recent years, concerns have been raised around the Lebanese government demanding access to the UNHCR's biometric records on Syrian refugees in the country; the WFP signing a $45 million data-analysis partnership with Palantir, a firm with deep ties to the U.S. intelligence apparatus; and the International Organisation for Migration providing biometric tracking systems to Niger's border police to help curb migration from West Africa (Jacobsen 2017; Parker 2019; Zandonini 2019). The United States' chaotic withdrawal from Afghanistan in 2021 also risked exposing two decades' worth of humanitarian data to the Taliban, while an investigation by Human Rights Watch revealed that the UNHCR provided personal information about Rohingya refugees to the Bangladeshi government, which then shared it with Myanmar to facilitate repatriation efforts (Loy 2021; HRW 2021). These infringements on beneficiary consent can scarcely be challenged by refugees whose access to assistance depends on their compliance with humanitarian data practices. The UNHCR, for instance, ensured that all Syrian refugees in Jordan's Za'atari refugee camp "voluntarily"

submitted to iris-scanning by deregistering their existing e-cards and declaring biometrics mandatory for continued support. In Yemen, amid fears that aid was being diverted to support Houthi rebels, the WFP suspended food delivery to a starving population unless Houthi officials allowed biometric technologies to monitor distribution (Latonero 2019).

These developments have repeatedly demonstrated the need for greater caution and vigilance against what Tom Scott-Smith (2016) calls "humanitarian neophilia" and its techno-utopian fantasies about innovation as a natural direction for the sector's future, prompting scholars and practitioners to advocate for a data justice movement for refugees and for updating the humanitarian precept of "do no harm" to "do no *digital* harm" (Dette 2018; Read, Taithe, and Mac Ginty 2016; Seelos and Mair 2012; Schoemaker et al. 2020). "There is a real risk," as Jeff Crisp (2018) argues, "that data management becomes an end in itself, absorbing scarce humanitarian resources while outstripping the ability of aid agencies to analyze the information they have collected and to use it in effective ways." Something else is lost in the process as well—a sense of phenomenological engagement once considered vital to humanitarian work is giving way to data-mediated remote management from fortified aid compounds—what Sarah Collinson and Mark Duffield (2013) call the "paradoxes of presence" between expanding assistance and minimizing exposure. As global crises become more complex and protracted with climate change, drawing together a proliferating network of transnational actors with diverging mandates and interests, the demand for new information-management and coordination tools will only grow. "The easy road," Duffield (2019) argues, "is to do nothing and submit to ever deepening automation, remote management, and the robotization of behavior. The more difficult task—and one that will define progressive politics for years to come—is to bring the oligarchic electronic atmosphere under democratic control." In mass displacement contexts involving non-citizens and stateless persons, it is unclear who constitutes this *demos*, or whether arrogating data justice to a higher supervening authority only reinforces the problem of control. The paradigm of humanitarian datafication offers us a glimpse into the brave new world that looms ahead if we do not find an answer.

ABSTRACT

Humanitarianism has recently undergone a so-called innovation turn, utilizing cutting-edge technologies to enhance the reach and efficiency of humanitarian aid. This article focuses on novel advances in the way aid organizations record, measure, and classify household vulnerability among Syrian refugees. Drawing on ethnographic

fieldwork in Lebanon and Jordan, I explore how the datafication of refugees in humanitarian action not only reveals the constitutive limits of quantitative ontologies but also poses transformative implications for the institutional configurations of humanitarianism. In particular, I suggest that the aid sector's growing reliance on data systems entrenches an extractive relationship between humanitarian organizations and refugees that conscripts, entangles, and unsettles data practitioners themselves. I conclude by pointing to vulnerability assessments as one node within a larger apparatus of integrated data systems, one that centralizes power within the humanitarian industry and poses grave risks for refugee rights. [humanitarianism; refugees; data; vulnerability; technology; NGOs; Middle East]

NOTES

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1. I use the name Mahmoud as a pseudonym and do not specify his INGO, as that would make it possible to ascertain his identity. However, Mahmoud's INGO was a typical Western aid organization with nominally secular ethical commitments, which offered a range of humanitarian services in Lebanon including education, child protection, shelter, and cash assistance.
2. This encounter is a synthesis of several household visits we conducted that day.
3. I have italicized paraphrases from unrecorded conversations that were reconstructed afterwards from fieldnotes.
4. The HPQ is a standardized questionnaire used by humanitarian organizations in Lebanon to collect household vulnerability data.
5. Indeed, aid organizations often justify invasive data-collection practices on the grounds of preventing fraud and abuse, even though there is little historical evidence to support this concern (Currion 2015).
6. The poverty line used by WFP in 2015 was defined as US$3.84 per person per day. This figure was already low compared to Lebanon's cost of living in 2015, and throws into stark relief the extreme destitution faced by refugees and poor Lebanese alike during the country's spiraling economic crisis since 2020, which the World Bank ranks as among the top three most severe crises globally since the mid-nineteenth century (World Bank 2021).
7. While WFP established a grievance redressal mechanism for its food voucher program in 2018, it is not clear to what extent refugees' petitions for re-inclusion were given serious consideration.
8. The European Union's (EU) General Data Protection Regulation, introduced in 2018, establishes new standards around the right to privacy and control over personal information, which may force organizations registered in the EU to alter their approach to data

protection. However, it remains to be seen whether the regulation will help overhaul the aid industry's data practices in toto (Gazi 2020).

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