Making Wearables in Aid: Digital Bodies, Data and Gifts¹

Kristin Bergtora Sandvik

Professor of Sociology of Law, Department of Criminology and Sociology of Law, University of Oslo; Research Professor in Humanitarian Studies, PRIO; bergtora@prio.no

Abstract

This is an initial exploration of an emergent type of humanitarian goods – wearables for tracking and protecting the health, safety and nutrition of aid recipients. Examining the constitutive process of ‘humanitarian wearables’, the article reflects on the ambiguous position of digital humanitarian goods developed at the interface of emergency response contexts, the digitisation of beneficiary bodies and the rise of data and private-sector involvement in humanitarian aid. The article offers a set of contextual framings: first, it describes the proliferation and capabilities of various tracking devices across societal domains; second, it gives a brief account of the history of wristbands in refugee management and child nutrition; third, an inventory is given of prototype products and their proposed uses in aid. It is argued that what needs to be understood is that, in ‘the making’ of humanitarian wearables, the product is the data produced by digitised beneficiary bodies, not the wearables themselves.

Keywords: humanitarian wearables, tracking devices, self-tracking, digital bodies, the gift, innovation

Introduction

The much touted technologising of humanitarian space has brought many useful innovations. The use of cell-phones, satellites, drones, social-media platforms, digital cash and biometric technology has changed how things are done, the speed and cost of doing them and from where and by whom they can be done (Sandvik, 2019). A central part of what these technologies accomplish is to generate data (Burns, 2015; Crawford and Finn, 2015; Fast, 2017; Read *et al.*, 2016). Digitisation – the collection, conversion, storage and sharing of data and the use of digital technologies to collect and manage information about individuals from affected communities – increasingly shapes understandings of need and the response to emergencies.² This use of digital technologies produces ‘digital bodies’ – images, information, biometrics and other data stored in digital space – that represent, track, quantify and monitor the physical bodies of populations affected by disaster and conflict, although these populations have little say or control over them (Lupton, 2015). Humanitarian technology has become a field of considerable scholarly interest, and this raises many issues with respect to the ‘do no harm’ aspect of humanitarian aid (Sandvik *et al.*, 2017), what it means to be neutral (Sandvik *et al.*, 2014), the proper role and relevance assigned to ‘humanitarian effectiveness’

(Redfield, 2012) and how the sector should relate to a developing global regulatory framework that is accompanied by an evolving global ‘techno-legal consciousness’ (Sandvik, 2018), where data protection and privacy are seen as basic rights (Hosein and Nyst, 2013).

My objective is to interrogate the ambiguous position of digital humanitarian goods developed at the interface of the affordances of emergency response contexts, the accelerating digitisation of beneficiary bodies, and increasing data and private-sector involvement in humanitarian aid.³ I want to focus on how these developments, the miniaturisation and personalisation of ICT technology and a growing interface with biotechnology are co-producing what I call ‘intimate humanitarian objects’ for use by individual beneficiaries on or inside their bodies (Jasanoff, 2004). The object of my analysis is the making of ‘humanitarian wearables’.⁴ These are conceptualised as smart devices that can be placed on or inside aid recipients’ bodies for many purposes, including tracking and protecting health, safety and nutrition. This may involve delivering or monitoring reproductive health, producing security and accountability through more efficient registration, or monitoring or delivering nutrition. I argue that, to unpack this co-production, it is necessary to look beyond technological innovation and subsequent processes of

adoption and adaptation in the humanitarian field (Sandvik, 2017) and consider humanitarian pasts and futures: earlier humanitarian uses of body tracking devices for care and control, together with how contemporary affordances in emergencies shape ideas about what wearables can be used for, on whom and how. I suggest that what the 'humanitarian wearable' tells us about the nature of digital humanitarianism can be the point of departure for articulating a critique of aid in the age of data colonialism (Couldry and Mejias, 2019).⁵

Wearables are understood as a form of 'technoscience' that contributes to the production of legible, quantifiable and consumable bodies, and which makes possible ordering practices that are materially productive of aid, but which may also create new protection needs for the digital/physical beneficiary body (Asdal *et al.*, 2007; Jacobsen and Sandvik, 2018). Little critical scholarly attention has been paid to the use of tracking devices in the Global South, and none at all to their use in the humanitarian context. As noted by Ruckenstein and Schüll, the health-wearables literature focuses on the Global North, where there is 'relatively broad embrace of the Internet and self-tracking technology by citizens; a cultural model of the ideal citizen as digitally literate and self-advocating; and a robust public debate around the ethical, legal, and social implications of big data' (Ruckenstein and Schüll, 2017: 262). There is thus a knowledge gap regarding the development and deployment of wearables in emergencies, where there are deep, extra-democratic power differences between beneficiaries and structurally unaccountable humanitarian actors, donors and private-sector actors.

This article suggests that humanitarian wearables have a structural dimension that risks being overlooked when the deployment of 'wearables for good' is framed as 'technical' and/or 'good – rather than political. Most scholarship on sensor technologies and self-tracking devices focuses on data collected voluntarily by individuals, for their own purposes. In contrast, my concern is how data collected in a setting where there are enormous power differences may be monetised by combining it with other people's data to make population-wide correlations and inferences that have market value (Nissenbaum and Patterson, 2016). No attention has been paid so far to the 'gift' element of data production and its implications for how we think about the nature of aid, participation and accountability. In *The Gift* Marcel Mauss explored how reciprocal exchanges of objects between groups build relationships between humans (Mauss, 1990). A significant body of scholarship has explored aid as 'gift exchanges'. This article moves beyond seeing aid as symbolic violence or a source of asymmetric power differences, suggesting that digital humanitarian goods represent a new form of 'gifting' from beneficiaries to humanitarian actors and their partners.

The article therefore offers a set of contextual framings: in Section 2, the expanding capabilities of tracking devices and their proliferation across societal domains are linked with the emergence of 'digital beneficiary bodies'. In Section 3, to illustrate the importance of seeing wearables in the context of the humanitarian past, there is a brief account of the history of wristbands in refugee management and child nutrition to illustrate how tracking devices have been used for control and governance purposes. Section 4 offers an inventory of proposed aid uses of wearables – the central issue here is not present or future uses but what is *imagined* as possible, appropriate or useful interventions and – crucially – for whom? Section 5 reflects on how wearables challenge our basic understanding of aid as a gift, of who provides resources and of who benefits, as humanitarian action is subsumed by global datacapitalism. This is followed by a brief conclusion.

What Is a Wearable?

The array of sensing and intervention modalities that go into wearable technology is constantly increasing. As observed by Wissinger (2017: 2), what we mean by 'wearable tech' varies significantly between social fields, ranging from 'wellness, to cuteness, to science fiction level body machine melding'. Wearables range from 'the eminently practical' to the 'utterly fantastical'. The functions of these digital technologies are not necessarily novel: paper maps have existed for centuries; pedometers date back to the eighteenth century; devices measuring distances cycled or walked, spectacles, prosthetic devices and wristwatches are further examples of historical wearable technologies (Carter *et al.*, 2018). However, because of mass production, digital technologies – human-computer interfaces, and the networked, biosensing, code-emitting nature of the technology – have evolved and spread rapidly over the last decade (Wissinger, 2017). We need to interrogate what wearables can do (including the intensification of surveillance of everyday practices), how their capabilities are framed (including through problem reframing) and *who* does the framing. Following Ruckenstein and Schüll, we must also consider the *nonhuman* elements that shape wearables, such as 'device parameters and affordances, analytical algorithms, data infrastructure, and data itself, as well as the processes and practices around them' (Ruckenstein and Schüll, 2017: 268).

A key question in the critical wearables literature is what role digital technologies have played in transforming and commodifying the social fields and bodies involved. Wearables can be passive applications (apps) that can be downloaded to smartphones, tablets and

smartwatches to aid wayfinding, or dedicated devices that record activity, or more sophisticated multifunction devices that also record multiple data streams including biomarkers (such as heart rate). They can combine data collection and drug delivery. Many apps and devices are designed to allow users to keep a record of their activities online or to communicate with third-party websites that track and analyse activity (Carter *et al.*, 2018: 2). Operating on the developing interfaces between bio and sensor technology, wearables provide measurement, selection, screening, legibility, calculability and visibility. Increasingly, they are also vehicles for the delivery of medicine or reproductive control. Tracking operates through and upon multiple layers: general biodata, such as height, weight, gender, age and race; bodily fluids, including blood, sweat, sperm and tears; and the capture of individual characteristics, including DNA, fingerprints, iris scans and voice and face recognition.

Wearables are constituted through regulation and legalities: a plethora of ethical and legal norms and rules shape and constrain the development of wearables and their affordances. The main regulatory frames for wearables are data-protection and privacy laws, consumer regulation and human rights law, which govern research, development, deployment and integration across social fields. Among these are stakeholder groups (such as regulators, civil society representatives, designers, data scientists, tech entrepreneurs and experts in cybersecurity, intellectual property and data-protection law) with differing priorities, values and skillsets, and consequently different approaches to datafication. In the context of fashion, Wissinger (2018: 779) notes that her interviews reveal that 'a laissez-faire culture is the environment in which wearable biotech is being developed and will be deployed'. She suggests that, given the range of approaches to data protection in design and the producer's responsibility, 'when consumers "opt in" to data sharing, they should be cognizant of the risks' (Wissinger 2018: 779). While this insight is relevant across a number of social fields, it should be noted that humanitarian beneficiaries are usually in a much more precarious position than consumers in the global market economy. Finally, as pertinently observed by Carter *et al.* (2018), a key thing wearables do is to make practices into problems when tracking physical activity for health and 'wellness'/lifestyle purposes: everyday mobility has been reframed as a public health problem requiring 'interventions' to increase activity. Users' activities can be monitored and uploaded to the internet, transforming social practices – and contributing to 'processes of biomedicalisation' (Carter *et al.*, 2018: 2). While we need to recognise the structural differences in context, I suggest these insights are crucial for understanding the making of humanitarian wearables.

Carving Out the Digital Body

In the wearable-technology literature, key critical questions include how such technology can augment the human body, how it affects the relationship to oneself and others, and whether wearable technology can promote human autonomy when it is locked into commercial and power relationships in which the users' best interests are not paramount (Wissinger, 2017). These questions are also highly pertinent in the humanitarian, where the risks are greater and the power of users (as consumers and citizens) much less. It has been noted that the literature on datafied self-care focuses overwhelmingly on wealthy, educated, cosmopolitan citizens and themes relevant to their everyday lives and perceptions of citizenship. Thus, the distinction commonly drawn between 'data rich' governments, institutions and commercial enterprises, which collect, store and mine data, and 'data poor' individual citizens targeted by such efforts has been criticised for obscuring global inequities (Ruckenstein and Schüll, 2017). This insight is highly relevant to humanitarian wearables, because it cautions against a 'Northern' perception of new technologies and how they are socially situated, and alerts us to how the existing literature tends to frame attributes, costs and trade-offs in a way far removed from the everyday reality of emergency situations.

Similarly, concepts such as 'data-double' reflect the concerns of the Global North, such as identity theft (Whitson and Haggerty, 2008). The 'self as laboratory approach' is concerned with how users experience tracking as restricting their lives. When users report negative attitudes to devices, part of their disenchantment is caused by arriving at 'dead ends': devices break, batteries die; they no longer enjoy playing with the gadgets or data visualisations; they fail to see progress or achieve their primary goals, which makes tracking tedious (Kristensen and Ruckenstein, 2018). In contrast, in research on the Global South, the focus is typically on connectivity and communication rather than on datafication and digitised self-care (Ruckenstein and Schüll, 2017).

Nonetheless, research on the power aspects of tracking in the Global North offers valuable insights into how tracking devices constitute the digital body: Lupton situates individual 'quantifications of the self' within a neoliberal context of coercion and control, where intimate biodigital knowledge is converted into biocapital: 'as physical and virtual units of human value to be bought and sold in the digital data economy' (Lupton, 2016: 117). Important gender implications arise from how surveillance technologies focused on bodies and personal lives intersect with identity-based

discrimination, particularly gender-based violence, such as stalking or honour killing, and societal power-relation constructs (Woodlock, 2017). The intensification of surveillance by self-tracking devices is significant, and, following Ruckenstein and Schüll (2017), it is useful to adapt Van Dijck's (2014) term 'dataveillance', which characterises the networked, continuous tracking of digital information processing and algorithmic analysis to grasp the modalities of surveillance that spring from wearables. Rather than originating from a singular source positioned 'above', dataveillance is distributed across multiple parties and its aim is not to 'see' a specific behaviour but to continuously track for emergent patterns (Ruckenstein and Schüll, 2017).

Humanitarian Wearables as Historical Technologies of Care and Control

To understand the material and symbolic effects of new humanitarian goods, it is important to look at the humanitarian past – at both the history of specific, local interventions and the legacies of institutional policies and practices (Sandvik, 2012). The humanitarian sector has long used wristbands to control and care for beneficiaries. This postcolonial past still shapes and limits what a wearable can be and do (Rottenburg, 2009). In what follows, I use examples from the areas of refugee management and nutrition to illustrate this point.

A key objective of international refugee management is to reduce fraud, one type of which is repeated registration by the same individual, or registration by those who do not qualify as recipients. In the past, UNHCR tried to avoid multiple registrations by using stamps, wristbands, photographs, fingerprints or biometrics (UNHCR, n.d.b). I will show how the use of wristbands involves a system of locations (encampments), standardised formats (registration cards, wristbands, tokens, etc. with set numbering, language, colours and security features) and procedures (night raids) that raises questions about potentially repressive aspects of contemporary humanitarian use of wearables.

According to UNHCR, wristbands identify each individual claiming to be a refugee, limit the recycling of the refugee population, serve as distribution 'cards' and give everyone better access to food and other assistance. They are, then, a tool for protecting the most vulnerable (UNHCR, n.d.a). Wristbands are considered to be a comparatively low-tech, low-cost, low-trauma method of fixing.⁶ However, as can be gauged from UNHCR documents, wristbands indicate an attitude of suspicion, where the main concern is to avoid manipulation: 'In the wristband method of fixing, a

single "tamper-proof" plastic bracelet is tightly secured around the wrist of each man, woman and child to be registered' (UNHCR, n.d.b: 140). However, as UNHCR notes, in most big operations, and despite improvements in the quality of wristbands, refugees often find ways of removing and reattaching the wristbands without damaging them.

Wristbands are also commonly used in extreme registration contexts, such as those involving enclosure systems – the herding of people into a confined space for registration. UNHCR states: 'Use of an enclosure system as a means of fixing the population to be registered should be seen as the last resort. It has major disadvantages, not the least of which being serious risks for refugees and staff if things go wrong. Inadequate crowd control can lead to loss of life. It should only be used in situations where despite all efforts the population continues to resist an alternative approach' (UNHCR, n.d.a). So-called 'night raids' are a similar phenomenon. In conversation, a former Norwegian Refugee Council camp manager in DR Congo described to me how night raids were used to facilitate aid delivery to a war-affected population. In the camp, located outside Goma, there had been unrest, including shooting, at aid distribution points. UNHCR dispatched technical staff from Geneva to handle the situation. After what my informant described as 'minimal briefing', in which camp officials were told to be ready at 1 a.m., registration started at 2 a.m. as the humanitarians entered the camp and told refugee leaders to wake everyone up and have them report for registration, on the assumption that 'everyone who belongs in the camp sleeps there'. The humanitarians snapped white wristbands on to all those present and everyone who had one was registered for aid the next day.⁷ UNHCR has protocols for this, explaining that 'Refugees will be informed the day before of the timing of the fixing exercise and that they will have to remain in or close by their shelters for the period of the exercise. The Security Force will be in place to ensure crowd control, and to prevent those outside the site from accessing it. (ii) Each two-person registration team will be assigned a total of 300 to 400 shelters. Once people have been given wristbands, they are free to move about again' (UNHCR, n.d.a).

Wristbands have commonly been used together with repressive and deeply intrusive interventions, such as enclosure systems and night raids, but UNHCR describes resistance to such registration practices as 'Rejection of registration practice based on religion, customs or superstition: Disaffected groups in search of a pretext may reject the use of certain registration practices, such as invisible ink or wristbands, biometrics, or taking of photographs' (UNHCR, n.d.a).

My second example, inspired by the important work of Scott-Smith (2013) and Glasman (2018), is the MUAC

band, which is a small strip of colour-coded plastic used to measure the mid-upper-arm circumference of children aged six months to five years to determine levels of malnourishment. The MUAC band provides a rapid indication of vulnerability, guiding the response of the aid worker (which may be referral to therapeutic feeding) as well as quantifying the human body, correlating height with age in certain ways. This band determines what kind of food people are given, what registration cards they get and where they are sent next; it has been in use since the 1960s. However, measuring and comparing bodily dimensions is a centuries-old practice, which became commonplace in the nineteenth century, when anthropologists focused on the physical features of human groups, (anthropometry) on the assumption that the body can divulge a wide range of important information. By examining physical shape and comparing this to a standard normal distribution, anthropometry identifies abnormal body sizes and suboptimal diets – a process that relies on problematic notions of a ‘normal’ (Western) body. Scott-Smith (2013) incisively argues that the MUAC tape remains a top-down mechanism: ‘It has most value for the distributor, not the recipient of aid: allowing the nutritionist to sort the population efficiently into those who will and will not receive assistance, offering a regularized mechanism for triage, and transferring difficult ethical decisions out of the aid worker’s hands’ (Scott-Smith, 2013: 923).

The trajectories of wearables presented in this section clearly indicate that complicated historical baggage calls into question the idea of humanitarian wearables as a benevolent technology. I suggest that the postcolonial characterisation of these trajectories to some extent also explains how potential uses for wearables are imagined. The idea that tracking devices in aid have most value for the distributor also informs the argument I make about digital tracking devices (Section 5). However, whereas wristbands produced data that made it possible to sort people into categories, the primary function of wearables now is their capacity to generate data.

Humanitarian Innovation and the Affordances of Emergencies and Technological Progress

Craig Calhoun (2010) notes that, as cultural constructs, the words ‘humanitarian’ and ‘emergency’ shape understandings of what happens in the world, who is supposed to act and what is supposed to be done. These understandings are usually accompanied by the notion that something *should* be done as a matter of principle. With respect to *what* must be done, as a concept and as an emergent practice of humanitarian governance, wearables must be understood in the context of the

technology-focused humanitarian innovation agenda, as well as of the general trends of the humanitarian sector. A culture shift has taken place regarding the permissibility and *necessity* of private-sector collaboration to achieve success. The optimism – sometimes unrealistic – about technology which pervades the sector means that digital humanitarian goods are routinely hailed as ‘game changers’ or ‘revolutions in humanitarian affairs’.⁸

At the same time, the optics of engaging in humanitarian activities have acquired commercial logic by creating a marketable moral economy of good intentions. While this has succeeded in creating societal acceptance (in the case of drones) or new consumers (in the case of cash cards), the promoters of humanitarian wearables might be more interested in achieving mass distribution to enable the technology to become a vehicle for large-scale data collection. Within the range of ‘tech for good’ items intended in the emergent discourse on wearables to provide technical fixes for world poverty, human suffering and seemingly everything else, I suggest that it is the fact that wearables are mass-scalable, multi-functional and small that makes them uniquely suitable. One commentator suggests that ‘Advantages of wearable technologies include that they are mass scalable, possesses many functions, deliver high volumes of potentially high-quality data and can be disseminated wherever there are people. For these reasons, one large potential opportunity is for wearable sensing systems to improve the lives of the world’s poor’ (Levine, 2017: 83).

The language of humanitarian wearables is both technical and aspirational. Wearables are partly enabled by the assumed functional integration of other types of ‘new’ technology: ‘Modern distribution and tracking systems enable thousands of units to be tracked in the field with relative ease. Advancement of drone-based systems will further facilitate the distribution of wearable biosensors into remote and potentially dangerous regions’ (Levine, 2017: 86).

Descriptions of specific devices focus on their technical attributes, in a manner disconnected from the physical conditions of emergencies – unstable and insecure, with potentially vulnerable, traumatised and suspicious users with limited data literacy – as well as the risks that come with using data-generating and emitting devices in this context:

The main applications of central monitoring unit will be the ability to process and store data from several patients and send regular or emergency report as well as notification to the physician to notify about patients’ physical condition.’ And the data which is taken from the human body will be sent to smartphone or tab through the wireless communication system. This information can also help doctors to decide which patient needs emergency service as the device can provide real-time data. Also, in the case of routine monitoring, a flash memory is added

with the device to store the data taken from the human organs. (Rashid *et al.*, 2017: 144)

There is often a disconnect between the technology and its social context. For example, a presentation of several ‘rescue-wearables’ on a trade website emphasises the technological possibilities for identifying individuals in distress: ‘Indonesian developers, Quick Disaster, have created an app for a wearable device like Google Glass. Quick Disaster provides guidance and information on rescue procedures for nine different disaster types and sends its GPS location to response teams. Quick Disaster can also be integrated with social media to inform others about the user’s situation’ (The Aid & International Development Forum, 2015). The same disconnect appears here: ‘Safelet and Cuff are GPS-equipped bracelets with integrated microphones. These technologies have the potential to be used by emergency responders being deployed in dangerous areas. They allow the wearer to send out an emergency alert to a chosen recipient, signaling they are in distress and providing their GPS location for recovery’ (The Aid & International Development Forum, 2015).

As observed in the case of crisis mappers and the standby task force, identifying individuals in need of rescue does not mean there is political will or logistical or economic capacity to provide the rescue (Sandvik *et al.*, 2014). In tandem with this, ‘problems’ are often presented as technical problems, to do with bandwidth-location issues, interoperability and standardisation. The language is one of ‘revolutions in health care’, ‘game changers’, etc. ‘From wearable gadgets to sophisticated implantable medical devices, the information extracted with mobile technology has the potential to revolutionize the manner in which clinical research is conducted and care is delivered’ (Barick *et al.*, 2016: 44). Wearables are presented as the better data-collection option, being less invasive – ‘by providing patients with sensors, wearable gadgets and apps, data is captured in an unobtrusive way’ (Barick *et al.*, 2016: 44) – and also more complete: ‘The information assimilated via mHealth allows physicians or investigators to work with more complete data sets and they can identify digital biomarkers that set the path for more intricate research’ (Barick *et al.*, 2016: 44).

I suggest that affordances in emergencies – underpinned by implicit and explicit moral orientations about agency, suffering and rights of intervention – are important in the case of wearables because of how they are understood by both the public and stakeholders in humanitarian innovation. The affordances of emergencies, coupled with what is technologically possible and what is imagined to be so, engender a permissive imaginary when intrusive uses for intimate tracking devices in the Global South are conceptualised and

legitimated. In a series of remarkable passages in a recent article called ‘The Application of Wearable Technologies to Improve Healthcare in the World’s Poorest People. Technology and Investment’, as part of a case study on the Kibera slum in Nairobi, Levine imagines a series of uses for aid wearables, noting that ‘Wearable sensors have multiple potential roles in infectious disease’ (2017: 89). First, ‘at the simplest level skin patches worn for weeks at a time could detect when a person develops fever’ (2017: 88). Patches could also enable TB or HIV infections to be detected, and

At the very least, these types of wearables would enable disease outbreak clusters to be identified and quarantined. New wearable technologies can be incorporated into intra-vaginal rings that not only incorporate sensors but also can potentially deliver interventions against infectious agents and vaccines. The application of wearable technology to infectious disease in manifold spanning surveillance through treatment. (Levine, 2017: 89)⁹

Taken together, these suggestions – that users should wear tracking devices (including as a form of remotely controlled contraception: see Lee, 2014) that could be tools for quarantining individuals seen as belonging to ‘disease outbreak clusters’ – raise multiple ethical questions and invite additional critical scrutiny of discourses surrounding the ability of certain technologies to ‘fix’ structural problems. These discourses are also the background to the critique articulated in the next section.

Aid or Gifts, and So What?

Of central concern in this article is how humanitarian digital goods turn the basic relationships of the aid sector upside down. My argument is that a proliferation of wearable technologies in the humanitarian space will lead to important questions about the nature and meaning of aid and about how we understand the elements of the key humanitarian relationships: who donates, who aids and who gives. The notion of ‘the gift’, as articulated by Marcel Mauss, has frequently been used as an analytical device in scholarship on humanitarian and development aid. Mauss explores how reciprocal exchanges of objects between groups build relationships. The obligation is articulated as a moral contract to give, to receive and to reciprocate. These gift exchanges have complicated rules about how much is given, why and in what context (Mauss, 1990).

Scott-Smith (2016: 2236) suggests that the innovation paradigm dislodges the aid metaphor: the economic vocabulary of the innovation discourse ‘changes the nature of the sector’ by presenting ‘aid not as a gift but as a commodity, and in doing so it removes human relationships and power differentials from view’. I think

that gift-framing is still useful, because the relational aspect is central to data-extraction: humanitarian aid – at least by donors and humanitarian actors – has often been construed as a one-directional activity premised on notions of charity – and of foreign policy. Commentators have used the notion of the gift as a starting point for framing critiques of conceptualisations of aid either as unidirectional and benevolent, with no ulterior motives (aid as symbolic violence), or as reciprocal, because accountability mechanisms, rights-based approaches and ‘listening’ projects have made humanitarian aid more of a participatory, multidirectional exchange (asymmetrical relationships produce power imbalances) (Bornstein, 2012; Hattori, 2003; Korf, *et al.*, 2010; Mawdsley, 2012; Silk, 2004; Stirrat and Henkel, 1997).

With the rise of wearables, this relationship is turned on its head, if we recognise that it is the beneficiary data that is the product, not the tracking device. No doubt the proposition that we should see the individual beneficiary as providing data of commercial value as a ‘gift’ will be met with stiff resistance. The prevailing attitude seems to be that this is neither an extractive relationship nor an inverted one: beneficiary data constitute a reciprocal gesture in return for humanitarian aid, the original gift. Given the continuing failure to characterise data transfer properly, it is useful to hold on to the gift concept as an analytical device.

This entails considering what kind of gifts data represent, the relationships ‘data gifts’ emanate from and create, and the costs and types of revenue generated, how and for whom. A first important issue is how we think about the freedom not to engage with the data market or not to be represented on commercial databases as a civilian in a humanitarian emergency. In an important contribution, Taylor asks how much visibility citizens owe the state. Using the example of the UN Global Pulse, she is critical of the notion of a ‘collective good’ duty to participate that ‘implies that development agencies have a claim to people’s data on a utilitarian basis, and that opting out should not be an option because it will impact on the rights of the collective’ (Taylor, 2017: 7). This duty of participation is rapidly becoming the normative backbone of managing populations ‘of concern’: for example, to be registered by UNHCR today, it is necessary to acquiesce to any form of data collection preferred by the agency, including fingerprint biometrics and iris scans. As regards the norms governing its activities, UNHCR strives to be compliant with its own data-protection policy.

A second problematic aspect of the ‘data gift’ is the increased risk of real-life harm generated by cyber insecurity (Sandvik and Raymond, 2017). While organisations optimistically proclaim that technology

redistributes power (OCHA, 2013) and that value-added information in itself constitutes relief, it is increasingly evident that new risks and harms stem from the adoption of humanitarian innovation and experimentation processes, particularly in relation to data.

Third, as argued throughout this article, the vulnerability of digital bodies is embedded in a commercial and historical matrix of dataveillance. This raises questions about what humanitarians do with this ‘gift’: should humanitarian organisations be able cultivate and sell caches of digital bodies? As we have seen, wearables are an established technology of care and control designed to produce information about beneficiaries.

Conclusion

This exploratory article aims to contribute to the growing body of critical scholarship on humanitarian innovation and to be the point of departure for empirical work on humanitarian wearables. I have argued that it is necessary to scrutinise the components of this technology, including socio-cultural ideas about machine–human interfaces. What I have been concerned with is how technological trends in hardware, software and sensors – their size, speed, durability and connectivity – together with humanitarian affordances past and present, co-produce an intimate humanitarian good. I have sought to show that wearables and the data they generate about individuals turn the aid relationship on its head, and that a reasonable re-characterisation of this relationship is to see it as gifting by beneficiaries to humanitarian actors.

The framing of humanitarian wearables as a form of ‘intimate humanitarian goods’ is intended to link the analysis to current discussions about data relations. Couldry and Mejias (2019: 337, 340) suggest that ‘Data colonialism combines the predatory extractive practices of historical colonialism with the abstract quantification methods of computing’; they explain that ‘this rests on the construction of data as a “raw material” with natural value’. Segura and Waisbord (2019) voice concern about the danger that the datacolonialism critique will become unduly sweeping and insensitive to the physical violence that was a feature of historical colonial practices. It can also be argued that the analogy is a bad fit because poor people’s data generally have little commercial value. However, I am convinced that the structural inequality and lack of choice underpinning the data extraction involved in making humanitarian wearables and the type of ‘gift’ relationship wearables create make it imperative that aid wearables should be discussed, in relation not only to datacapitalism in aid but also to datacolonialism.

In conclusion, I suggest that what the ‘humanitarian wearable’ tells us about digital humanitarianism and about who is getting the ‘gift’ can be the point of departure

for articulating an ideological critique of intimate humanitarian goods and of aid more generally. Experimental innovation in the testing and application of new technologies and practices in humanitarian contexts can underpin unethical, illegal and ineffective trends that result in increased vulnerability and harm for the humanitarian subjects involved. If we are to gauge these 'macro' and 'micro' harms properly, empirical work must be done to study how wearables are deployed in the field.

Notes

- 1 Research for this paper was funded by the PRIO-hosted project 'Do No Harm: Ethical Humanitarian Innovation' (EtHumIn), and the UiO-hosted project 'Vulnerability in the Robot Society (VIROS)', both funded by the Research Council of Norway. I am grateful to the editors and to anonymous reviewers for their valuable comments.
- 2 While 'affected communities' and other such formulations are preferred usages within the aid sector, I will be using the term 'beneficiary' as an analytical concept to gauge how the sector situates digital bodies in a web of structurally unequal relationships within global datacapitalism.
- 3 The 'humanitarian goods' literature is framed with an important critical edge: humanitarian goods are things that are designed to do good. (Cross, 2013; Scott-Smith, 2013; <http://humanitarianigoods.com/> (accessed 1 June 2019)).
- 4 This article represents a preliminary effort at conceptualisation. Though UNICEF hosted a high-profile 'wearables' challenge (<http://wearablesforgood.com/> (accessed 1 June 2019)) in 2015, wearables have so far not been routinely used in the humanitarian space.
- 5 I take a highly methodological approach to this initial scoping of humanitarian wearables and draw a good deal on studies of humanitarian goods and data, and tracking devices. My argumentation also draws on experiential insights gained through my work with practitioners in the humanitarian technology field. The examples of 'promotional' approaches to wearables presented in Section 4 were selected to illustrate a point, and not necessarily because they are representative of how the aid sector has engaged with wearables over the last five years.
- 6 As noted by UNHCR (2003: 141) in the case of ink: 'This fixing method is not entirely satisfactory. In some situations, unfounded rumors have spread that the ink is a poison or will cause birth defects or sterilization. Refugees and others have discovered simple ways to remove the stain, such as washing their hands in citric acid, which is found in lemons and vinegar.' For the general context of gossip and rumours, and in particular those about 'baby-killing among refugees', see Sandvik (2013).
- 7 Field notes on file with author, Oslo, 23 January 2018.
- 8 For a general discussion of digitisation and datafication in humanitarian governance, see Dijkzeul and Sandvik (2019).

- 9 Presumably a typo in the manuscript, which is meaningful when 'in' is replaced with 'is'.

Bibliography

- The Aid & International Development Forum (2015), 'Solutions That Are Saving Lives in Humanitarian Response', 8 May 2015, www.aidforum.org/topics/disaster-relief/top-solutions-that-are-saving-lives-in-humanitarian-response (accessed 1 June 2019).
- Asdal, K., Brenna, B. and Moser, I. (eds) (2007), *Technoscience: The Politics of Interventions* (Oslo: Academic Press).
- Barick, U., Gowda, A., Mohanty, E., Dutt, A. R., Somanath, M., Mittal, S. and Patil, A. (2016), 'Harnessing Real World Data from Wearables and Self-monitoring Devices: Feasibility, Confounders and Ethical Considerations', *MEFANET Journal*, 4:1, 44–9.
- Bornstein, E. (2012), *Disquieting Gifts: Humanitarianism in New Delhi* (Stanford, CA: Stanford University Press).
- Burns, R. (2015), 'Rethinking Big Data in Digital Humanitarianism: Practices, Epistemologies, and Social Relations', *GeoJournal*, 80:4, 477–90.
- Calhoun, C. (2010), *The Idea of Emergency: Humanitarian Action and Global (Dis) order* (New York: Zone Books).
- Carter, S., Green, J. and Speed, E. (2018), 'Digital Technologies and the Biomedicalisation of Everyday Activities: The Case of Walking and Cycling', *Sociology Compass*, 8:4, e12572.
- Couldry, N. and Mejias, U. A. (2019), 'Data Colonialism: Rethinking Big Data's Relation to the Contemporary Subject', *Television & New Media*, 20:4, 336–49.
- Crawford, K. and Finn, M. (2015), 'The Limits of Crisis Data: Analytical and Ethical Challenges of Using Social and Mobile Data to Understand Disasters', *GeoJournal*, 80:4, 491–502.
- Cross, J. (2013), 'The 100th Object: Solar Lighting Technology and Humanitarian Goods', *Journal of Material Culture*, 18:4, 367–87.
- Dijkzeul, D. and Sandvik, K. B. (2019), 'A World in Turmoil: Governing Risk, Establishing Order in Humanitarian Crises', *Disasters*, <https://onlinelibrary.wiley.com/doi/10.1111/disa.12330> (accessed 1 June 2019).
- Fast, L. (2017), 'Diverging Data: Exploring the Epistemologies of Data Collection and Use among Those Working on and in Conflict', *International Peacekeeping*, 24:5, 706–32.
- Glasman, J. (2018), 'Measuring Malnutrition: The History of the MUAC Tape and the Commensurability of Human Needs', *Humanity: An International Journal of Human Rights, Humanitarianism, and Development*, 9:1, 19–44.
- Hattori, T. (2003), 'The Moral Politics of Foreign Aid', *Review of International Studies*, 29:2, 229–47.
- Hosein, G. and Nyst, C. (2013), 'Aiding Surveillance: An Exploration of How Development and Humanitarian Aid Initiatives Are Enabling Surveillance in Developing Countries', *I&N Working Paper 2014/1*, www.idrc.ca/sites/default/files/sp/Documents%20EN/WP2014-1-AidingSurveillance-web-Nov21.pdf (accessed 1 June 2019).
- Jacobsen, K. L. and Sandvik, K. B. (2018), 'UNHCR and the Pursuit of International Protection: Accountability through Technology?', *Third World Quarterly*, 39:8, 1–17.
- Jasanoff, S. (ed.) (2004), *States of Knowledge: The Co-Production of Science and the Social Order* (London and New York: Routledge).
- Korf, B. et al. (2010), 'The Gift of Disaster: The Commodification of Good Intentions in Post-tsunami Sri Lanka', *Disasters*, 34, 60–77.
- Kristensen, D. B. and Ruckenstein, M. (2018), 'Co-evolving with Self-tracking Technologies', *New Media & Society*, 20:10, 3624–40.
- Lee, D. (2014) 'Remote Control Contraceptive Chip Available by 2018', 7 July, BBC, www.bbc.com/news/technology-28193720 (accessed 1 June 2019).
- Levine, J. A. (2017), 'The Application of Wearable Technologies to Improve Healthcare in the World's Poorest People', *Technology and Investment*, 8, 83–95.

- Lupton, D. (2015), 'Digital Bodies', SSRN 2606467.
- Lupton, D. (2016), *The Quantified Self* (Cambridge: Polity Press).
- Mauss, M. (1990), *The Gift: The Form and Reason for Exchange in Archaic Societies* (London: Routledge).
- Mawdsley, E. (2012), 'The Changing Geographies of Foreign Aid and Development Cooperation: Contributions from Gift Theory', *Transactions of the Institute of British Geographers*, 37:2, 256–72.
- Nissenbaum, H. and Patterson, H. (2016), 'Biosensing in Context: Health Privacy in a Connected World', in Nafus, D. (ed.), *Quantified: Biosensing Technologies in Everyday Life* (Cambridge, MA: MIT Press), pp. 79–100.
- OCHA (2013), *Humanitarianism in the Network Age: Including World Humanitarian Data and Trends 2012*, https://www.unocha.org/sites/unocha/files/HINA_0.pdf (accessed 1 June 2019).
- Rashid, H., Ahmed, I. U., Das, R. and Reza, S. M. T. (2017), 'Emergency Wireless Health Monitoring System Using Wearable Technology for Refugee Camp and Disaster Affected People', *International Conference on Computer, Communication, Chemical, Materials and Electronic Engineering, IC4ME2* (Rajshahi: IEEE Bangladesh Section), 144–7.
- Read, R., Taithé, B. and Mac Ginty, R. (2016), 'Data Hubris? Humanitarian Information Systems and the Mirage of Technology', *Third World Quarterly*, 37:8, 1314–31.
- Redfield, P. (2012), 'Bioexpectations: Life Technologies as Humanitarian Goods', *Public Culture*, 24:1:66, 157–84.
- Rottenburg R. (2009), 'Social and Public Experiments and New Figurations of Science and Politics in Postcolonial Africa', *Postcolonial Studies*, 12:44, 423–40.
- Ruckenstein, M. and Schüll, N. D. (2017), 'The Datafication of Health', *Annual Review of Anthropology*, 46, 261–78.
- Sandvik, K. B. (2012), 'Negotiating the Humanitarian Past: History, Memory, and Unstable Cityscapes in Kampala, Uganda', *Refugee Survey Quarterly*, 31:1, 108–22.
- Sandvik, K. B. (2013), 'Rights-based Humanitarianism as Emancipation or Stratification? Rumours and Procedures of Verification in Urban Refugee Management in Kampala, Uganda', in Derman, B., Hellum, A. and Sandvik, K. (eds), *Worlds of Human Rights: The Ambiguities of Rights Claiming in Africa* (Leiden: Brill), pp. 257–77.
- Sandvik, K. B. (2017), 'Now is the Time to Deliver: Looking for Humanitarian Innovation's Theory of Change', *Journal of International Humanitarian Action*, 2:1, 8.
- Sandvik, K. B. (2018), 'Technology, Dead Male Bodies, and Feminist Recognition: Gendering ICT Harm Theory', *Australian Feminist Law Journal*, 44:1, 49–69.
- Sandvik, K. B. (2019), 'Technologizing the Fight against Sexual Violence: A Critical Scoping', *PRIO Paper* (Oslo: PRIO), www.prio.org/Publications/Publication/?x=11260 (accessed 1 June 2019).
- Sandvik, K. B. and Raymond, N. (2017), 'Beyond the Protective Effect: Towards a Theory of Harm for Information Communication Technologies in Mass Atrocity Response', *Genocide Studies and Prevention*, 11:1, 9–24.
- Sandvik, K. B., Jumbert, M. G., Karlsrud, J. and Kaufmann, M. (2014), 'Humanitarian Technology: A Critical Research Agenda', *International Review of the Red Cross*, 96:893, 219–42.
- Sandvik, K. B., Jacobsen, K. L. and McDonald, S. M. (2017), 'Do No Harm: A Taxonomy of the Challenges of Humanitarian Experimentation', *International Review of the Red Cross*, 99:904, 319–44.
- Scott-Smith, T. (2013), 'The Fetishism of Humanitarian Objects and the Management of Malnutrition in Emergencies', *Third World Quarterly*, 34:5, 913–28.
- Scott-Smith, T. (2016), 'Humanitarian Neophilia: The "Innovation Turn" and Its Implications', *Third World Quarterly*, 37:12, 2229–51.
- Segura, M. S. and Waisbord, S. (2019), 'Between Data Capitalism and Data Citizenship', *Television & New Media*, 20:4, 412–19.
- Silk J. (2004), 'Caring at a Distance: Gift Theory, Aid Chains and Social Movements', *Social and Cultural Geography*, 5, 229–50.
- Stirrat R. L. and Henkel, H. (1997), 'The Development Gift: The Problem of Reciprocity in the NGO World', *Annals of the American Academy of Political and Social Science*, 554, 66–80.
- Taylor, L. (2017), 'What is Data Justice? The Case for Connecting Digital Rights and Freedoms Globally', *Big Data & Society*, 4:2, 2053951717736335.
- UNHCR (2003) 'Handbook for Registration: Procedures and Standards for Registration, Population Data Management and Documentation', www.refworld.org/pdfid/3f967dc14.pdf (accessed 18 January 2020).
- UNHCR (n.d.a) 'Registration Guidelines', <https://reliefweb.int/sites/reliefweb.int/files/resources/AD0FDA8A15FAB9EEC1256D360037732C-hcr-register.pdf> (accessed 1 June 2019).
- UNHCR (n.d.b) 'Handbook For Registration, Part 2: How To – Introduction, Part 2: How to Register, Manage Population Data – and Issue Documentation', www.unhcr.org/3f8e97344.pdf (accessed 1 June 2019).
- Van Dijck, J. (2014), 'Datafication, Dataism and Dataveillance: Big Data between Scientific Paradigm and Ideology', *Surveillance & Society*, 12:2, 197.
- Whitson, J. R. and Haggerty, K. D. (2008), 'Identity Theft and the Care of the Virtual Self', *Economy and Society*, 37:4, 572–94.
- Wissinger, E. (2017), 'Wearable Tech, Bodies, and Gender', *Sociology Compass*, 11:11.
- Wissinger, E. (2018), 'Blood, Sweat, and Tears: Navigating Creepy versus Cool in Wearable Biotech', *Information, Communication & Society*, 21:5, 779–85.
- Woodlock, D. (2017), 'The Abuse of Technology in Domestic Violence and Stalking', *Violence against Women*, 23:5, 584–602.