The Birth of Code/Body<sup>1</sup>

Pre-Print: Akbari, A. (2024). The Birth of Code/Body. In V. Steeves & B. Roessler (eds.). *Being Human in A Digital World*. Cambridge University Press. (all publication rights remain with the publisher. For a final version with page numbers, please consult the book)

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"They ask me how did you get here? Can't you see it on my body? The Lybian desert red with immigrant bodies, the Gulf of Aden bloated, the city of Rome with no jacket. [...] I spent days and nights in the stomach of the trucks; I did not come out the same. Sometimes it feels like someone else is wearing my body".

From the poem 'Conversations About Home (at the Deportation Centre)' by Warsan Shire

"We are Black and the border guards hate us. Their computers hate us too."

Excerpt from group discussion at later-evacuated L'Autre Caserne community in Brussels (Molnar 2020, 12)

This book contends with various ways of being human in the digital era, and this chapter intends to describe what it means to have a human body in our time. Much has been written about the colonial, racialising, and gendered continuities of perceiving, sorting, and discriminating bodies in a digital world. However, nothing like the digital has transformed the materiality of the body in its very flesh and bone. It seems redundant to say that the body is the prerequisite to being human, yet this superfluous fact questions how bodies function in inbetween worlds: they flow in this world's digital veins and yet rigidly represent decisive characteristics. They seem unreal, an amalgamation of data sometimes, while other times, fingerprints, iris scans, and bone tests portray a cage, a trap, a body that betrays. This contrast is especially visible in uncertain spaces, where identity becomes crucial and only certain

<sup>&</sup>lt;sup>1</sup> The combination of Code/body is first used by Suneel Jethani in their paper on self-tracking and mediating the body (Jethani 2020). The paper uses the similar notion of code/body or coded body to represent the hybrid or networked body. However, my chapter's theoretical perspective differentiates between code/body and coded body, and furthers the concept beyond self-quantification.

categories of humans can *pass*, such as borders and refugee camps. These spaces are not only obscuring the body while exposing it; they also exist in a complex mixture of national jurisdiction, international regulations, and increasingly private 'stakeholders' in immigration management. In addition to the severity of experiencing datafication of bodies in these spaces, the deliberate unruliness paves the way for these spaces to become "technological testing grounds" (Molnar 2020); for example, technologies developed for fleeing populations were used for contact tracing during the COVID-19 pandemic.

The relationship between body, datafication, and surveillance has been scrutinised from the early days of digital transformation. Today's most debated issues, such as algorithmic bias, were already warned about, and the ramifications of their discriminatory assumption for marginalised people were highlighted at the end of the 80s (Gandy 1989). Similarly, the predictive character of aggregated data and the consequences of profiling were analysed (Marx 1989). From these early engagements, developed many instances of showing how routinely technologies are used to govern, datafy, and surveil the body- see, for example (Bennett et al. 2014). Additionally, Surveillance scholars discussed how the "boundary between the body itself and information about that body" is increasingly transforming (Van der Ploeg 2012, 179). Building on this rich body of literature and personal experiences of immigration, exile, and entrapment, this chapter revisits the body, being uncomfortable in/with/within it, and yet being aware of its power to define if one is considered human enough to bear rights, feelings, and existence. Similar to the chapter's movement between boundaries of the material and virtual, the text also oscillates between academic thinking, autobiographical accounts, pictures, and poesy; denoting the discomfort of being in a code/body. This text is inspired by my lecture-performance at PACT Zollverein performing arts theatre in Essen, Germany. In this chapter, poetic language remedies the absence of the performative to help with the linguistic distress for finding the right words to describe embodied feelings.

## From Data Doubles to Embodiment

The scholarship on datafication, surveillance, and digital transformation in the 2000s is infatuated with what can be called the demise of the material body. The speed of datafication and digital change lead to the idea that the surveillance society gives rise to *disappearing* bodies (Lyon 2001); the body is datafied and represented through data in a way that its materiality is obscured. Although such conceptualisations had been formerly discussed, especially by feminist and queer scholars, the liberatory nature of these feminist

interpretations of cyborg bodies (Haraway, 1985) and body assemblages were not transferred into these new understandings of datafied and surveilled body. In their influential essay on surveillant assemblages, Haggerty and Ericson compare the digital era with Rousseau's proclamation, "man was born free, and he is everywhere in chains" by claiming that nowadays "humans are born free, and are immediately electronically monitored" (Haggerty and Ericson 2000, 611). The subjectivating effect of surveillance, then, is instantly interlinked with basic rights and the meaning of being human. The body, they argue, is positioned within this surveillance assemblage: it is "broken down into a series of discrete signifying flows" (Haggerty and Ericson 2000, 612). Contrary to the Foucauldian way of monitoring, the body needs to be fragmented to be observed. Fragments can be combined or re-combined into "data-doubles": ones that "transcend human corporeality and reduce flesh to pure information" (Haggerty and Ericson 2000, 613).

The scholarly debates on bodies in the following two decades were centred around the transformation of the body "via practices of socio-technical intermediation" (French and Smith 2016, 9). The body and its datafication, visualisation, mediation, and multiplication have become increasingly important. Research about sorting, profiling, and reification of marginal identities (or race/gender/class/etc.), inclusion, and exclusion proliferates and successfully demonstrates how bias, racism, oppression, and discrimination are injected into digital lives. The data double revealed the concurrent processes of the body's objectificationto transform its characteristics to data- and its subjectivation due to the socio-technical processes of datafication. As Zuboff assertively writes in The Age of Surveillance Capitalism, "the body is simply a set of coordinates in time and space where sensation and action are translated as data" (Zuboff 2019, 203). In this reading of the body, behaviour surplus is the engine of surveillance capitalism, and the body is only another source of data. However, recent technological advancements, especially in using bodily features for identification, have started to expand and reconfigure such accounts. More recent studies underline the body's centrality, for example, in big data surveillance and manipulation of the "surveilled subject's embodied practices" (Ball, Di Domenico, and Nunan 2016) or critically examine how biometric technologies transform the relationships between the body and privacy (Epstein 2016). It is argued that data body is not only a change in how bodies are represented but there exists an ontological change: the materiality of the body "and our subjective forms of embodiment that are caught in this historical process of change" are transforming (Van der

Ploeg 2012, 179). This chapter contributes to these later discussions, where the body is not only central as the source of data but has its own agency as an actant in data assemblages.

## The Birth of Code/Body

Following the global digital transformation, discussions on issues of privacy, data protection, algorithmic harm, and similar, have entered the academic discourse and public debate. The recent years have seen an increase in reporting about the Big Tech companies as emerging new actors in the international governance realm. However, only those events that entail geopolitical or socio-economic relations to the Western countries are deemed relevant. For example, the news of Chinese payment methods through facial recognition rapidly reached the Western media (Agence France-Presse 2019), but much less attention is paid to the internal politics of digitalisation in the Global South or the new e-governance measures of international governance institutions. This reluctance is intensified when digital technologies target communities that are marginalised, stateless, or economically disadvantaged. UNHCR's use of iris scanning for refugee cash assistance illustrates a case of extreme datafication of body against people in dire need of assistance with hardly any voice to consent to or refuse the imposed technologies. Ninety per cent of refugees in Jordan are registered through EyeCloud, "a secure and encrypted network connection that can be used to authenticate refugees against biometric data stored in the UNHCR database" (UNHCR 2019). Iris scanning is then used for payment in the camp's supermarkets, to calculate and pay the wages for working inside the camp, and it replaces any monetary transaction. The EyeCloud demonstrates how current datafication practices do not only stop at using the datafied body for identification and representation but actively integrate the body as a part of data machinery. This instrumentalised body carries the gaze of surveillance and guards itself against itself. The consequences are painful: more than a decade ago, the Guardian reported that the asylum seekers burn their fingertips on electric stoves or with acid to avoid the Dublin regulations and being returned to their point of arrival- usually in Greece or Italy (Grant and Domokos 2011). The betraying body, however, regenerates fingertips after two weeks. Similarly, in cases where the age assessment of a claimed minor proves inconclusive, the person could be referred for a bone density test of the wrist by X-ray in Malta (Asylum Information Database 2023) or a "dental x-ray of the third molar in the lower jaw and MRI of the lower growth plate of the femur bone" in Sweden (Rättsmedicinalverket 2022). In these cases, the immigration authorities believe the body's truthfulness and the accuracy of medical sciences against mendacious and deceitful asylum seekers. Table 1 shows the extent of data

categories gathered on visa, immigration, or asylum applicants travelling to Europe. The body increasingly becomes a vehicle for *knowing* the real person behind the application.

Personal data stored in the different EU immigration data banks						
Data Type	SIS	VIS	EURODAC	EE	ETIA	ECRIS
			*	S	S	-TCN
Alphanumeric Data						
"general" information (name, age,	X	X	(x)	X	x	X
gender, nationality)						
Occupation		X			х	
Education					X	
Reason for travel		X				
Information about funds for living		X				
expenses						
Address, phone number, Email-					X	
Address, IP-Address						
Information about past or present	x				X	X
felonies						
Information about recent stay in a war					X	
or conflict region						
Biometric Data						
Fingerprints	X	X	X	X		X
Facial image	X	X	(x)	X		X
Genetic data	X					
* Data in brackets will be stored should the 2016 proposal and its amendments be approved						

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Table 1. Data categories stored in European immigration data banks 2

 $^2$  The table has been produced in 2022 in collaboration with Christopher Husemann, my PhD student in political geography, University of Münster.

The body acts as a trap. It transcends the current argumentations about profiling, sorting, or bias based on personal data. What we witness is not just the datafication of the body but its function as ID card, debit card, or labour hours registration sheet. If the cash machines, IDs, and punched cards were yesterday's technologies, today these features are transferred to the body. The body becomes the payment system, the surveillance machine, the border. It is integrated into the datafied society's infrastructure. It is platformised humanity. It is an integral material part of the bordering. On the Eastern European borders, heartbeat detectors, thermal-vision cameras, and drones are used to unlawfully return the asylum seekers who manage to pass the border (Popoviciu 2021). The border is not a line on the map; it is everywhere (Balibar 2012, 78). The border is simultaneously a body on the move and a vehicle to keep out a body that does not belong. Consequently, the body/border can efficiently prevent flight since it entraps. When the Taliban got hold of biometric data banks that Western governments, the UN, and the World Bank left behind in 2021, many activists and experts who collaborated with the coalition went into hiding because any border passage would put them in immediate danger of identification (Human Rights Watch 2022). They went into indefinite house arrest within the skeleton of their own bodies.

This notion of corporeal entrapment or embodied surveillance resonates with the new conceptualisation of how we understand space in the era of datafication. Coded space is defined as "spaces where software makes a difference to the transduction of spatiality, but the relationship between code and space is not mutually constituted" (Kitchin and Dodge 2011, 18). The Digitalisation of border security at airports or the use of digital technologies in the classroom are examples of coded space. In all these instances, when technology fails, there are still ways to finish the intended task: if the machine in a fully-automated high-tech airport does not recognise you, there is always an officer who can legitimise the authenticity of your ID. However, in the *code/space*, the existence of space is dependent on the code and vice versa. If you are attending an online presentation and the technology fails, that would end your interaction. The code/space highlights the dyadic relationship between the two and their co-constructive nature (ibid.). The dyadic relationship also explains the sense of corporeal entrapment. The datafied or *coded body* still exists, moves, and functions. It has a mutual relationship with the data it produces but is not entirely constituted through it. We have our virtual profiles in social media platforms or wear smart watches, but as soon as we leave such spaces, we resign to be part of their universe. The code/body, however, is born in coconstruction with the code and ceases existence if the code fails.

The code/body is an extension of code/space argumentation to the Foucauldian corporeal space, constantly subject to governmentality. Consequently, the surveillant assemblage introduced by Haggerty and Ericson (2000) is not only about the production of data double. Their use of Deleuzian conceptualisation of 'body without organs' as an abstraction of the material body does not reflect the co-construction of the virtual and the material. Code/body, on the other hand, offers a way to understand how the materiality of the body remains integral to our understanding of the body's datafication while transcending the virtual-material dichotomy. The code/body carries manifold wounds: the bodily pain of being wounded -burnt fingertips, lungs full of water, starved behind border walls-and the hidden wounds of datafied exclusion. Although algorithms try to hide their bias, code/body reveals that race has a colour, ethnicity has an accent, and gender could be 'scientifically' examined. Underlining such material features of the body and their role in defining the cod/body emphasises "the coconstitution of humans and non-humans" (Müller 2015, 27) and brings our attention to how things are held together and how datafied societies function. Extending the assemblage point of view, Actor Network Theory (ANT) provides a better empirical ground to understand the politics of the networks. It moves the focus more on outward associations and less on the intrinsic characteristics of a thing or its abstraction. The code/body highlights the coconstitution of these outward-inward associations and the body's agency in changing the flows and associations within the assemblage. From this perspective, things have an open and contested character (Mol 1999, 75), and the body is performative, meaning that its position within an assemblage can redefine its reality. Consequently, if one thing could be shaped by a variety of practices and networked connections, it can be configured in multiple and ambivalent ways. Lawful immigrants from internationally undesirable countries experience this multiple configuration throughout their border experiences. Visas to countries that have been visited before get rejected; border officers ask irrelevant questions to make the entry unpleasant or surprisingly act extra friendly. Automated passport check stations flicker a red light for double control, but on the next visit, go green. The assemblage changes, and the integrated body in it changes accordingly. The code/body is, then, the ultimate device to realise and fulfil this fluidity. As a result, it is highly political how assemblages take shape, what actants dominate the flows, and which of the multiple realities of a thing are given preference. The ontological politics (Mol 1999, 74) of code/body define the conditions of the possibility of being a human. Depending on their position in an assemblage, a person's body could be reconfigured very differently. Heartbeats mean one thing on a smartwatch at a spinning class and another when sitting behind a lie detector machine at a border detention

centre. Such politics of being are not only about positionality and 'where we are' but also include temporality and 'when we are'. I was held several times at the UK border detention centre despite having a valid visa. On both occasions, a sympathetic border officer took upon himself the time-consuming task of removing me from the 'bad list.' It feels like a wonder that within 40 minutes, a detained suspicious person, banished to a corner of the airport under the watchful eyes of a guard, turns into a legal traveller. Like a thing, the body can be understood as "a temporary moment in an endless process of assembling materials, a partial stabilisation and a fragile accomplishment that is always inexorably becoming something else, somewhere else" (Gregson et al. 2010, 853). Code/body, again, facilitates this temporary and mutable process of re-configuration.

## A Moebius Body

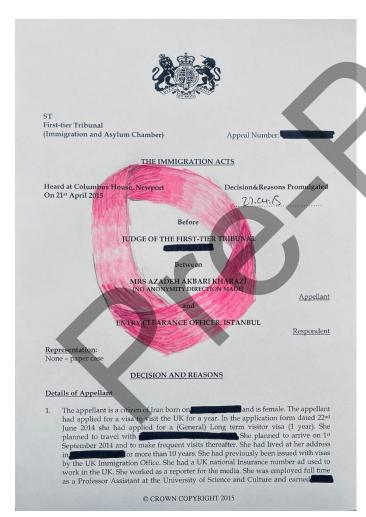


Figure 1. Mobius Strip on Immigration Court's Verdict- Copyright Azadeh Akbari, 2023

The code/body blurs not only the virtual-material binaries but also nuances the politics of sorting by questioning the discourse of inclusionexclusion through digital technologies, platforms, and algorithms. Code/body extends concepts such as mediated body or quantified self to propose an existential situation where the *self* stops to exist outside the code. This newly contended notion of self is the prerequisite of citizenship in the smart cities- the utopian dream of an urban life which all societies are ambitiously moving towards. In future smart cities, we will not only witness behaviour nudging or the gamification of obedience (Botsman 2017); cities will be transformed into experimental labs, where the urban citizen is produced

through measuring (Mattern 2016). On top of gathering data through sensors, following the movements and urban flows, and closely watching the bodies, the body becomes an

instrument of belonging. To be in, it needs to be outed. The body needs to be thoroughly datafied to become integrated into the city's smart infrastructure. Living in the code/body is a constant ride on a Moebius ring: the inside and outside depend on how one defines their situation or how their situation is defined for them. The code/body could belong to an urban assemblage at a specific time and lose all its association by a slight change in the code in the next second. In figure 1, I have drawn a Moebius ring on the verdict of my complaint against UK immigration's refusal of my tourist visa. I had lived in London for four years, and after giving up my residency and returning to Iran, my tourist visa application was rejected. I was confused: I used to belong, work, live, and actively participate in British society. Why was I suddenly out? Curiously, the judge had suggested since I can use technologies such as Skype to contact my friends in the UK, my human rights are not deemed to be violated. The code kept my body outside through its affordances to bring us closer. The movement between inside and outside makes bodily functions fuzzy as if one can die while breathing and live forever, even after the heart stops. The following quote from a Somali refugee initially shocks the reader: Did they drown? Immediately after this thought, it seems his body has been revived from a mass of drowned refugees.

"I was caught by the Lybian coastguard three times – first time from Qarabully; second time, Zawyia; third time, Zuwarna. And my fourth time, we drowned. And the fifth time, I made it to safety."

Somali refugee now residing in Europe- quoted from (Hayden 2022, 5)

Another female Kurdish Iranian protestor during the Woman, Life, Freedom movement – a movement of Iranian women against compulsory Islamic dress code - reflects on how her body experiences the images she had previously seen on (social) media. She writes about how the physical and digital blend into each other, and despite the fear of pain instigated by watching social media videos, the real baton or pellets do not cause the expected physical pain.

"I once received loud cheers when I escaped a scene of confrontation with security forces and ran into the crowd. [...] The next morning when I was looking over my bruises in the mirror, the details of the confrontation suddenly passed before my eyes. [...] I had not simply been beaten; I had also resisted and threw a few punches and kicks. My body had unconsciously performed those things I had seen other protestors do. I remembered the astonished faces of the guards trying to subdue me. My memory had just now, after a time interval, reached my body". (L 2022)



Figure 2: Blocking CCTV cameras in Public transportation with menstruation pads.

Source: Viral picture on social mediaphotographer is unknown.

The body's agency leaks into the consciousness only after it has performed a task. In moments of upheaval, where the oppressed body stands up to its oppressors, it tries to distort its entrapment. Despite being surveilled, controlled, and censored the body lives the unpermitted imaginary: it kicks the security forces, it runs and hides, it shows skin. It revolts against the sensory limitations imposed on it. In figure 2, Woman, Life, Freedom protestors have covered a subway CCTV camera with female menstrual pads. Their female bodies withstand the gaze that controls, hides, oppresses, and objectifies them. Next to the camera is a hashtag with an activist's name: this time, virtual campaigns fuse into the material reality of the city. The code/body which is meant to be a part of the surveillant machinery through CCTV camera and facial recognition technologies, blinds the omnipresent eye with its most female bodily function: menstruation.

Similar to silencing some bodily features, some bodies are marked as intangible, unrepresentable, and unfathomable. Despite being embedded within different streams of data and code, our collective imagination still does not register the precarity of some bodies. At the time that artificial intelligence claims to further the limits of our creative powers by creating historical scenes or impossible fantasies, I inserted the poem by Warsan Shire at the beginning of this chapter in three popular AI-based text-to-image generation platforms. The results in figure 3 show irrelevant pictures of mostly men depicting some keywords of the poem. The messiness of the poetry -and the poet's feelings- does not translate into clear-cut images. The

machine fails to grasp even the theme of the poem. The wounded code/body remains hidden. The skin bears the pain of these wounds without bleeding and without any algorithm capturing its suffering. The person is caught in a body that can be datafied, but its emotions cannot be perceived.

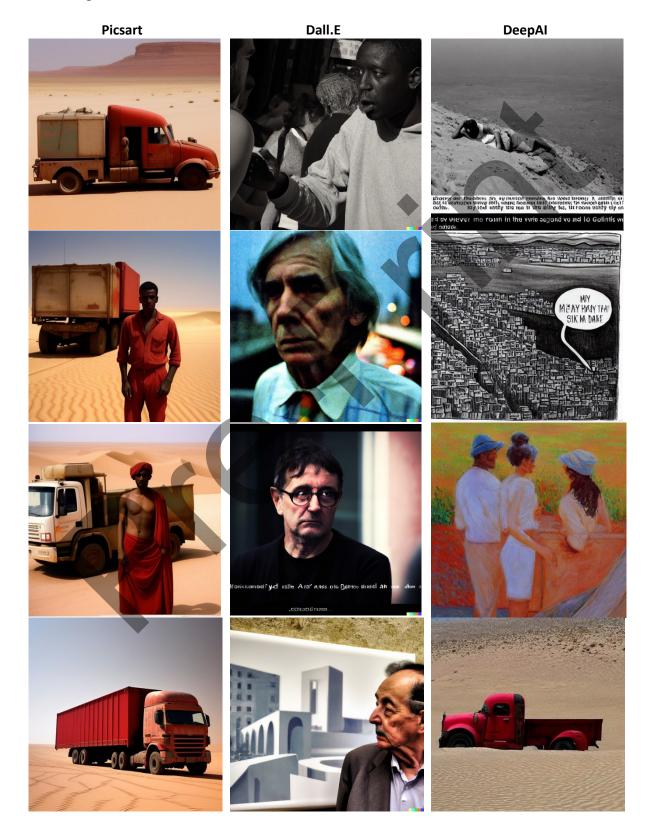


Figure 3. Al-generated pictures based on the poem 'Conversations About Home (at the Deportation Centre)' by Warsan Shire in three popular Al-based platforms

This chapter does not aim to investigate the political, economic, or social reasons or structures that construct the code/body. The biopolitical and necropolitical, the Foucauldian corporeal space and its governmentality have been the subject of many scholarly debates. How surveillance and datafication affect these spaces is also not a new matter of discussion. However, it seems persistently new how uncomfortable the body feels for some people. The more some lives are exposed to precarity of intense datafication, some bodies are forced to give away their unscrupulous owner. Surveilling and constant measuring of the code/body assures that these lives remain precarious. Some bodies, it seems, could be easily deleted, like a line of *dead code*.

Tell the sea after the news of my death
that I wasn't that thirsty to fill my lungs with his water,
that I am only an extremely exhausted man
who suffered all his life long from poverty
who work all day long
to pursue a dignified life for his children
I wanted to flee like all poor people
I went to you, sea
to pull me out of the darkness
to take me to a brighter trajectory
You misunderstood me, sea

I told you that I wasn't thirsty

Mahmoud Bakir, a young father from Gaza, wrote this poem in February 2021 before drowning on his way to reach Europe

## References

Agence France-Presse. 2019. 'Smile-to-Pay: Chinese Shoppers Turn to Facial Payment Technology'. *The Guardian*, 4 September 2019, sec. World news.

https://www.theguardian.com/world/2019/sep/04/smile-to-pay-chinese-shoppers-turn-to-facial-payment-technology.

Asylum Information Database. 2023. 'Identification'. *Asylum Information Database* | *European Council on Refugees and Exiles* (blog). 27 April 2023.

https://asylumineurope.org/reports/country/malta/asylum-procedure/guarantees-vulnerable-groups-asylum-seekers/identification/.

Balibar, Étienne. 2012. *Politics and the Other Scene*. Translated by Christine Jones, James Swenson, and Chris Turner. Verso.

Ball, Kirstie, MariaLaura Di Domenico, and Daniel Nunan. 2016. 'Big Data Surveillance and the Body-Subject'. *Body & Society* 22 (2): 58–81. https://doi.org/10.1177/1357034X15624973.

Bennett, Colin J., Kevin D. Haggerty, David Lyon, and Valerie Steeves, eds. 2014. *Transparent Lives: Surveillance in Canada*. AU Press.

Botsman, Rachel. 2017. 'Big Data Meets Big Brother as China Moves to Rate Its Citizens'. *Wired UK*, 21 October 2017. https://www.wired.co.uk/article/chinese-government-social-credit-score-privacy-invasion.

Epstein, Charlotte. 2016. 'Surveillance, Privacy and the Making of the Modern Subject: Habeas What Kind of Corpus?' *Body & Society* 22 (2): 28–57. https://doi.org/10.1177/1357034X15625339.

French, Martin, and Gavin Jd Smith. 2016. 'Surveillance and Embodiment: Dispositifs of Capture'. *Body & Society* 22 (2): 3–27. https://doi.org/10.1177/1357034X16643169.

Gandy, Oscar H., Jr. 1989. 'The Surveillance Society: Information Technology and Bureaucratic Social Control'. *Journal of Communication* 39 (3): 61–76. https://doi.org/10.1111/j.1460-2466.1989.tb01040.x.

Grant, Harriet, and John Domokos. 2011. 'Dublin Regulation Leaves Asylum Seekers with Their Fingers Burnt'. The Guardian. 7 October 2011.

https://www.theguardian.com/world/2011/oct/07/dublin-regulation-european-asylum-seekers.

Gregson, N., M. Crang, F. Ahamed, N. Akhter, and R. Ferdous. 2010. 'Following Things of Rubbish Value: End-of-Life Ships, "Chock-Chocky" Furniture and the Bangladeshi Middle Class Consumer'. *Geoforum* 41 (6): 846–54. https://doi.org/10.1016/j.geoforum.2010.05.007.

Haggerty, Kevin D., and Richard V. Ericson. 2000. 'The Surveillant Assemblage'. *The British Journal of Sociology* 51 (4): 605–22. https://doi.org/10.1080/00071310020015280.

Haraway, Donna. 1985. 'Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s'. *Socialist Review* 80: 65–108.

Hayden, Sally. 2022. My Fourth Time, We Drowned. Melville House.

Human Rights Watch. 2022. 'New Evidence That Biometric Data Systems Imperil Afghans'. *Human Rights Watch* (blog). 30 March 2022. https://www.hrw.org/news/2022/03/30/new-evidence-biometric-data-systems-imperil-afghans.

Jethani, Suneel. 2020. 'Mediating the Body: Technology, Politics and Epistemologies of Self'. *Communication, Politics & Culture* 47 (3): 34–43. https://doi.org/10.3316/informit.113702521033267.

Kitchin, Rob, and Martin Dodge. 2011. *Code/Space: Software and Everyday Life*. The MIT Press. https://doi.org/10.7551/mitpress/9780262042482.001.0001.

L. 2022. 'Figuring a Women's Revolution: Bodies Interacting with Their Images'. *Jadaliyya*, 5 October 2022. https://www.jadaliyya.com/Details/44479.

Lyon, David. 2001. Surveillance Society: Monitoring in Everyday Life. Buckingham: Open University Press.

Marx, Gary T. 1989. *Undercover: Police Surveillance in America*. University of California Press.

Mattern, Shannon. 2016. 'Instrumental City: The View from Hudson Yards, circa 2019'. *Places Journal*, April. https://doi.org/10.22269/160426.

Mol, Annemarie. 1999. 'Ontological Politics. A Word and Some Questions'. In *Actor Network Theory and After*, edited by John Law and John Hassard, 74–89. Oxford: Blackwell Publishing.

Molnar, Petra. 2020. 'Technological Testing Grounds: Migration Management Experiments and Reflections from the Ground Up'. EDRI. https://edri.org/wp-content/uploads/2020/11/Technological-Testing-Grounds.pdf.

Müller, Martin. 2015. 'Assemblages and Actor-Networks: Rethinking Socio-Material Power, Politics and Space'. *Geography Compass* 9 (1): 27–41. https://doi.org/10.1111/gec3.12192.

Popoviciu, Andrei. 2021. "They Can See Us in the Dark": Migrants Grapple with Hi-Tech Fortress EU'. *The Guardian*, 26 March 2021, sec. Global development.

https://www.theguardian.com/global-development/2021/mar/26/eu-borders-migrants-hitech-surveillance-asylum-seekers.

Rättsmedicinalverket. 2022. 'Medical age assessment'. Rättsmedicinalverket. 18 October 2022. https://www.rmv.se/medical-age-assessment/.

UNHCR. 2019. 'EYECLOUD© Enhancing the Delivery of Refugee Assistance'. UNHCR Operational Data Portal. https://data2.unhcr.org/en/documents/details/68208.

Van der Ploeg, Irma. 2012. 'The Body as Data in the Age of Information" in D. Lyon, K.Ball, K. Haggerty (Eds).' In *Routledge Handbook of Surveillance Studies*, edited by Kirstie Ball, Kevin D. Haggerty, and David Lyon, 176–84. Routledge.

Zuboff, Shoshana. 2019. The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power. New York: PublicAffairs Books.