(e.g. experience-centred design). Missing too is the sense of urgency which the Cambridge Analytica/Facebook scandal, as well as the operationalization of GDPR, has brought to the fore in many tech debates. This is part and parcel of the lags and lapses of publishing, and perhaps a future edition may bring this debate to the fore in ever more exciting ways. Moreover, I was disappointed at times at how very rich observations were surfaced and then dropped; supervising, as I do several computer science students, I wondered how they may make best use of these observations. It may be too on-the-nose to ask for an "implications" chapter, but I missed this future-facing orientation, and believe the book has a particularly exciting one to offer.

Minor complaints aside, this book is an important one, forwarding perspectives that should be read by those currently the building and making available the sorts of systems and artefacts problematized within. We are seeing the commodification and reduction of our data everyday – it is particularly worrying when aspects such as our own health and wellbeing are prey to this as well; even worse when complex concepts such as fertility, community, and self are threatened as well. The editors are, I think, correct, when they criticize in the opening pages the notion that we are living in either a tech utopia or dystopia – however, it is the shades of grey which should concern us, and which this book highlights very well.

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# Digital Health: Critical and Cross-Disciplinary Perspectives

Increasing proliferation of fitness trackers and health management apps into daily use has led to an increased public awareness of the "Digital Health" movement. Through Digital Health, Lupton focusses on the current scholarly work on digital health technologies, and the impact of digital technology and digitisation of information and health records on citizen, governments, and healthcare systems. This volume focusses on a number of key issues from the key theoretical concepts behind digital health understanding, big data, health apps, self-monitoring wearable devices, and the impact of the digital health movement on medical and health work, providing key background information on each and making clear the links between topics.

The introduction of the volume sets out a clear pathway for the rest of the book, setting the topic of digital health within the context of technological and information advances through the different stages of the World Wide Web, and the emergence of "big data" as massive data sets which can be used to try and understand the routine activities of technology users. Lupton also charts the changes from early health-related websites, to cross-platform apps and devices which continue to be used in novel and unprecedented ways, leading to some questions about the ethics of recording this data, and the security with which it is shared. This chapter closes out with a succinct chapter by chapter overview of the rest of the volume which is a helpful tool for the reader to understand the argument of the author at a glance.

Chapter 1 covers the theoretical background behind the Digital Health movement, spanning from the socio-material focus on embodiment and digital interactions, to the distributions of power from a political economic approach which debates whether power in medical decisions lies with the individual who is generating the data, medics who are interpreting it, or companies whose apps or wearables are collecting and commercialising data. Themes of phenomenology and embodiment are also presented as easy to understand sections.

Crucially for the discussion presented through the rest of the volume, Lupton also presents the theories of surveillance and privacy, stretching from Foucauldian theories of self-hood and surveillance, to contemporary "dataveillance" theories of intimate and networked surveillance which shape interactions online, and particularly how people share health data and engage in digital accountability.

Moving on from the theoretical background, Chapter 2, entitled "The digitised healthy citizen", focusses on how individuals are interacting with their health digitally, from gamification apps, telemedicine, and self-care promoting, through to interacting with public health organisations over social media. This chapter also covers in more detail how wearable devices are increasing patient engagement in their own care, as well as promoting greater levels of self-management. Throughout this chapter, Lupton discusses the idea digital health as the next stage of "patient as consumer" concept by generating data on an individual scale, placing greater responsibility for health management on an individual, rather than healthcare professionals. This data collection requires constant "dataveillance", and a concept of the body/self-optimised for data collection and digitisation. This sense of embodiment is discussed further in Chapter 3, which focusses on the practices people undertake in order to construct a digital picture of themselves. This spans from wearable devices and the ways in which individuals present themselves on social media, through to more literal interpretations of digital embodiment through medical imagery, and 3D printing of limbs and organs, all of which contribute to a digital image of an individual's health. The combination of topics in Chapters 2 and 3 contribute to the digital health "big data" set, which is discussed in Chapter 4 along with the affordances and ethical uses of this data.

Chapter 4 discusses the potential uses for big digital health data across domains and purposes, alongside the privacy concerns of personal data being leaked or exposed. The means used to collect data have been expanded and increasingly commodified, which has left them at the risk of security breaches. This has led to a conflict between the want to collect increasingly more data about individuals, and the need to protect the data from individuals and groups seeking to use the data alike. Lupton ends this chapter talking about the ways in which these data are collected and commodified can impact on future digital technologies and social inequality.

Chapters 5 and 6 are inextricably interlinked, with Chapter 5 discussing the social patterns of digital technology use and the means by which the collection of health data can reinforce social disadvantage, and Chapter 6 then going on to discuss why people may or may not use digital health technologies. Both of these touch on individuals' ability to interact with these technologies, such as access to social media or wearable devices, wherein a lack of ability may lead to increased social disenfranchisement, and an ability to access is not a reliable indicator for use as it may change depending on context of use, the individual using it, or the perceived level of surveillance and influence the technology collecting the data may seem to have. This power dynamic is touched on again in the next chapter.

Chapter 7 closes out the individual topic chapters by focussing on the role of digital health technologies and data in health and medical work. This covers the increasing use of digital health records and information sharing between professionals, as well as the potential to extend this to their patients. One key element of this chapter, and linking back to the theories presented in Chapter 1, is the potential to the disruption to the "traditional" doctor/patient power balance with the patient taking more control of their own data and using it to influence treatment options.

Throughout *Digital Health*, Lupton provides a comprehensive overview of a complex multi-disciplinary field which is well explained and easy to follow for researchers looking to gain an extended understanding outside of their own field. The issues raised around "big data" and the power imbalance between the providers holding the data, and the individuals whose data are being collected are timely and topical, although I would perhaps have expected comments on the use of fitness trackers in workplace health insurance to have touched more on the employers right to privacy, surveillance

issues, and the ethics on 24/7 monitoring of the workforce. However, I understand that these topics are far more specific than the space for discussion of wearable self-tracking devices would have allowed.

I would recommend *Digital Health* to social and medical researchers looking to develop a broader understanding of the complexities of the digital health field both as a theoretical field and an arena for conducting future research.

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