

Critical Criminology, Zemiology, and Surveillance Capitalism: Towards A Digital Zemiology

A thesis submitted in partial fulfilment of the requirements of
Liverpool John Moores University for the degree of Doctor of
Philosophy

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November 2025

*Yeah, I might have lost a part of me
While mindlessly acknowledging some shit about my privacy
In Mark's updated policies*

'ZUCK' cleopatricks (2022)

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Abstract

Digitality (Negroponte, 1995) – describing the condition of living in the presence of ubiquitous digital technologies and the blurring of online and offline space (Hassan, 2020) – signifies the current epoch. With research highlighting the emerging psychological, social, and developmental (Haidt, 2024) harms emanating from the digital context, digitality represents a new frontier of harm production – in which gaps emerge in Critical Criminological and Zemiological knowledge.

Within this context, this research seeks to understand and assess the applicability and limitations of, and emerging opportunities within, Critical Criminology addressing Digital Harms. Utilising Zuboff's Surveillance Capitalism (2019a) as a lens through which to conceptualise the digital context, implications for the present and future of human identity and autonomy manifest. Through this lens, an opportunity emerges to develop a Zemiology informed by the digital context that can confront the deepening harms of digitalization and consider the future of resistance practices.

Interrogating the intersection of digitalization and harm production through an exploratory case study of the ultra-fast fashion industry, distinct harms emerge which speak to a realm of harm production beyond the social – moving the Zemiological gaze toward the realm of cognition. In questioning the present and future of resistance practices, inequalities are revealed regarding who resistance tactics are accessible to.

Engaging in interdisciplinary work, this offers developments to theoretical knowledge within Critical Criminology, Zemiology, Surveillance Studies, Postphenomenology, Digital Materialism, and Disconnection Studies. This thesis presents the first theorisation of Digital Zemiology – presenting a theory of harm embedded within the context of digitality.

Acknowledgments

Needless to say, this thesis would not have been possible without the support of many a caring individual. First and foremost in the ‘thank you’ list are my supervisory team, both past and present. Emma Murray, Will McGowan, Stuart Taylor, Joe Sim, and Noel Cross; whose insight, guidance, support, and encouragement over the years are the foundations upon which this is built.

Joe; the surreal memory of receiving the email that started your involvement in the project whilst at a punk gig in a warehouse will always remain a cherished moment of this research project, and our many musical discussions ever since. And the academic ones as well, of course.

Emma; without whom I truly would not be where I am today. Ever an inspiration, your mentorship and friendship are invaluable.

My colleagues at Manchester Metropolitan University; for their encouragement throughout the final year of this project. Adi Kuntsman, Becky Clarke, Samantha Fletcher, and so many more than the remainder of this thesis’s word count will allow me to list. But they know who they are.

My fellow John Moores Criminal Justice PhD students; Hilary Currin, Connie Pike, Paul Doke. Your friendship means the world to me.

My partner; without whose unwavering support, especially in the last 12 months, this thesis would never have materialized.

And, of course, my dog – Öbbu.

Preface

The point at which this thesis starts is not its beginning. Rather, it is somewhere very much toward the end of the journey this piece of research has been on. The actual beginning comes long before the reader's current entry point and, admittedly, was the place and time at which I was most comfortable with the work I was undertaking.

My intention when I began this piece of research was for it to be a continuation of the path I had already paved during my MA Criminal Justice thesis; that being to explore the social and environmental harms of the fast fashion industry. This seemed a straightforward trajectory, lending itself almost perfectly to Social Harm frameworks and the corporate crime field of study, and would allow me to proceed through a PhD utilising literature and perspectives with which I was equipped to adapt to a subject matter aligned with my previous research and personal interests. This would be my expert knowledge, and I would be the one to, finally, make the fast fashion industry a criminological issue. From the enormous environmental costs of the industry, to the routine abuse of garment workers' human rights, to the conditioning of consumers into cycles of constant consumption, these were corporate harms that I could evidence, articulate, and somewhat quantify. I can confidently state that at no point during the beginning of this project did I anticipate the abrupt turn into digitality, surveillance, identity and autonomy that this has now entailed.

This expedition into the unknown of digitality came from a number of harsh realities: (i) the fast fashion corporation as I had previously articulated it, with its high street storefront and billboard advertisements, was slowly losing its market dominance; (ii) the corporations displacing this prior dominance were unanimously foregoing the traditional physical retail space to instead operate entirely digitally; and (iii) shoppers are increasingly consuming, be that consumption of fashion products or corporate sponsored advertising, in spaces other than those previously designated for these activities via digital accessibility. Admittedly these realisations came from my own

experience of being the epitome of target audiences for fast fashion corporations – a woman in her early to mid 20s for whom most social interactions took place digitally via social media, especially having begun this research in February of 2021 and having taken the plunge to do so self-funded through an anxious urgency triggered by COVID-19. During my MA study, fast fashion advertising became inescapable as I visited retail websites to collect my research data, leaving behind my digital trace and collecting my mandatory internet cookies as I went. The digital spaces I visited thus became littered with targeted advertising from fast fashion corporations, as my research activities fed into the algorithms deciding who was being advertised to me and when. The shadow of these research activities continued long after the MA thesis was complete, especially as I found myself housebound alongside the majority of the population throughout 2020 with little else to do but sit on the internet.

The decision to undertake a PhD came shortly after – although, at this stage, without the conscious awareness of the digital turn the industry was taking that I had just spent months passively observing. Throughout the first year of this research, I attempted to maintain the same focus on social and environmental policy that I had previously utilised, and yet continually found myself facing an onslaught of targeted advertising every time I endeavoured to check in on the fast fashion industry’s recent activities. This inescapability was suddenly at the forefront. My attention was constantly guided toward companies whose activities I knew to be massively environmentally and socially harmful, companies I knew to be unethical and unsustainable in their practices and business models, and yet I had no way of avoiding them nor any control over my digital space to somehow ‘turn it off’. It became impossible to continue to research the fast fashion industry without firstly addressing this digital schism and the displacement of those corporate powers with which I was familiar. To address this necessitated a delve into articulations of the digital and recognitions of the developments in capitalism that I had been experiencing. I first began with literature pertaining to the changing advertising space due to social media, finding predominantly business and economics journals praising the innovation of the digital space and heralding the increased profits this offered corporate entities. Computational disciplines discussed the technological aspects of

seizing this digital capability and fashion literature heralded the introduction of non-fungible tokens and blockchain technology as new frontiers in arts creation and the authentication of luxury goods. Critical perspectives were, at first, difficult to find as the consensus seemed to be that the targeted advertising I was experiencing, and could not avoid, can only be a good thing. So why do I feel manipulated?

The turning point came in September of 2021 when, after a summer of frustrated literature searching, I decided to rearrange my bedroom. It was upon rearranging my collection of books that I rediscovered a title I had purchased but had yet to find the time to read – *The Age of Surveillance Capitalism* by Professor Shoshana Zuboff. I had bought this book almost two years prior, it having been recommended to me by one of the many lecturers/customers who would frequent the campus-adjacent café I worked at throughout my Bachelors and Masters. Having promptly purchased and subsequently forgotten about the book, its sudden reassertion into my awareness presented the beginning of a new chapter for this piece of research. Zuboff's work gave voice to the digital manipulation that I had been experiencing and gave the digital schism I had observed a name – Surveillance Capitalism. Far from being the fast fashion-orientated manipulation I had been articulating, I began to understand the changing dynamics of social control in the digital age and that this was not simply an issue of fast fashion advertising but comprised a development of capitalism with far greater implications. The issue then became how it would be possible to research this development whilst avoiding facilitating this corporate surveillance further.

My motivation thus became to investigate digitality through the analogue. To undercut the enforced digitality of the surveillance age and explore fast fashion consumption away from the gaze of the digital device by using one of my own personal creative outlets – analogue film photography. The study I constructed equipped participants with their own disposable film camera with which to document their clothing consumption. The composition of their photographs could take any form they wished, be that a clinical documentation of the garment on its own or an artistic expression of their personal style. These images would then form the basis for a non-chronological interview of their

relationship to each garment and their experiences of digitised identity through their consumption and digital presence. To give myself credit, the intentions of this were ambitious and sought to embrace creative methodologies so often overlooked in the social sciences. Despite this, the study faced rebuttal from Liverpool John Moores' (LJMU) Research Ethics Committee (REC) for the wastefulness of disposable film cameras – with recommendations being to ask participants to use their own smartphones to capture the images instead. The reflexive underpinnings of my desired use of analogue photography seemed lost when it came to the REC, with my further intentions to respect participants' data privacy and avoid the digital surveillance gaze being issues of ethics not considered by the committee.

My choice of methods was staunchly defended, and, with a few tweaks, the study was granted approval to proceed. I promoted the study to LJMU L6 students after giving my first lecture on Surveillance Capitalism. Despite the waning attention in the room at the time, this garnered 10 initial volunteers, 6 emails affirming interest, and 2 students who signed and returned their consent forms to participate and be dispensed cameras. Participants had 8 weeks during which to capture their consumption before returning their cameras, the film to be developed, and their photographic diaries printed for interview. Before the interview, they would be given the opportunity to select 6 of their images to discuss in detail with the other images remaining on the table to allow for reference and to encourage a disruption of narrative chronology. The interview schedule sought to garner the general details of their consumption practices before engaging with each of their 6 chosen images singularly and closing with a discussion of their relationship to digital architectures and presentations of identity. My participants were eager, with one expressing they had an upcoming holiday for which they needed an entirely new summer wardrobe and so would give me lots of great material for my study.

During those first few weeks, the emails I received from my two participants were fraught with anxiety; an anxiety at their inability to review the photographs they had captured, an anxiety that they had not captured enough, and an anxiety which meant they had not captured anything at all. The anxiety of capturing these moments of their lives, and the

inherent critical gaze of doing so for the purpose of academic research, seemingly incapacitated them. Not only did the emotionless gaze of a Kodak SuperSave 35mm disposable camera prove an insurmountable barrier to their clothing consumption but seemed one-gaze-too-many in the confrontation of their relationship to digitality and surveillance. I never did receive those cameras back, nor did I ever hear from either participant again. This of course means that, somewhere, those cameras exist in the world in one form or another. Their gaze, however, captures nothing without the conscious decision-making of my would-be participants – their choices to wind the camera, to compose their photo, and to press the shutter. Without this human agency, the camera – and the unseen, undeveloped photographs within it – materialise to nothing. Herein lies the disruption of the harms this study sought to avoid; as whilst the critical gaze of awareness and documentation obstructed my participants' ability to capture their digital anxieties, the analogue lens means that this is entirely their own. Their right to withdraw has been implicitly asserted and their right to ownership of their unseen images declared, agreements that have been in place from the beginning of their involvement. Their anxieties are, and will remain, their own.

Upon their silent withdrawal, they chose aloneness with these anxieties. Their agency allowed them to choose not to share, to not submit their internal processes and construction of self to be pulled apart, analysed, and regurgitated as 'findings' by a PhD student who, to this day, is still unsure if they could undertake such a task themselves. It is, however, this aloneness, and the ability to choose it, that was perhaps the very first 'finding' of this research and the point at which the reader should begin. As a researcher I have a presence, a corporeality that I now understand makes such vulnerability intimidating to share and confront in the construction of your sense of self. Sans lab coat and clipboard, my researcher presence nonetheless presented my participants with the knowledge that the anxieties they had begun to express were the very narratives to be dissected and analysed by a face-having entity and would further be immortalised in a final thesis and who-knows-how-many academic articles. It is this corporeality that makes this process hard. We may continue in our blissful ignorance of the constant analysis of the data we produce in the digital space due to the faceless entities

conducting it, the opacity of their analysis methods, and the seamless integration of their outputs into our digital environments. This is a facelessness and opacity which manufactures our perceived aloneness with our digital identities and anxieties, further serving to avoid drawing attention to itself through the lack of a consent form to participate.

To confront that one's identity and autonomy are routinely commodified, manipulated, and undermined without awareness in the pursuit of corporate profit is no simple task nor is it one that can possibly be prepared for. I need only reflect on the many students I have taught who, when sat in a lecture discussing the harms of the digital age and this same commodification, resort to their smartphones for short-term entertainment to witness the ease and relief digital technologies offer in times of discomfort. So often this discomfort arises from the confrontation of these manipulative architectures and hidden influences – and yet we choose to look away. To look into the black mirror of one's device and sit with this discomfort seems unnatural when their very design encourages us to circumvent our aloneness for a synthetic connectedness. It is easier to stay logged in than to log out. My participants could never have been ready for the task that they were given, but I am forever grateful to them for sharing with me this struggle.

Introduction

This thesis will critically analyse the intersection of digitalization and harm production, evaluating the utility and limitations of Critical Criminology and Zemiology in the context of digitality (Negroponte, 1995) and Surveillance Capitalism (SC) (Zuboff, 2019a). In doing so, this research presents both an invitation to and exploration of a unique theoretical orientation and an emerging field of study – Digital Zemiology. Developing a digitality-embedded theory of harm throughout this thesis, Digital Zemiology speaks to the emergent harms of the digital context. The rationale for and context of this research is outlined below; introducing the concept of ‘digitality’ (Negroponte, 1995) and the rise of SC (Zuboff, 2019a), before outlining Critical Criminology’s engagement with the digital and the role this plays in harm production.

Digitality, Surveillance Capitalism, and Harm

Amid rising concerns for data privacy (Liang, 2023), online child protection (Crawford, 2023), cognitive development (Hill, 2022; Therrien, 2018), technology addiction (Devlin, 2024), and the environmental costs of increasing digitalization (Milmo, 2024), we face the urgent need to understand the impacts of digitality (Negroponte, 1995). In describing the condition of living in a digital culture, digitality refers to the ubiquitous presence of digital devices, the blurring of online and offline spaces, and ultimately the suffusion of life by networked technologies (Hassan, 2020). An extension of Weiser’s ‘ubiquitous computing’ (1991), in which the presence of networked technologies is pervasive and embedded into human livelihood, digitality signifies a historical epoch facilitated by the growing prevalence of corporate entities and their technological presence into everyday life. Known as ‘Big Tech’, corporations such as Alphabet, Apple, Microsoft, Meta, and Amazon have grown in economic power and global proliferation – now sitting among the largest and most profitable transnational corporations of the current era. Whilst starting

as product and service providers, the shift in Big Tech corporate activities to a now ubiquitous presence in everyday life signifies the encroaching of digital technologies and corporate power into further facets of the human experience.

The harmful activities of corporate entities signify no new field of study within Critical Criminology, instead representing a foundational area of study formative to the discipline itself (Sutherland, 1940). In questioning structures of power, Critical Criminology has long critiqued the harmful corporation and its relationship to State power (Box, 1983; Kramer & Michalowski, 1990), emphasising combined state/corporate structures that enable the production of harm. As Critical Criminology's perennial critique of capitalism, the corporate and state/corporate crime perspectives adopt a structural approach to harm recognition thus adopting a Marxist lens through which to form its critique. Seeking to take these critiques further, Zemiology emerged to recognise social harms which lie outside the confines of criminal action (Hillyard & Tombs, 2004). With this later expanding into human-needs based understandings of harm acknowledging the detriment of the obstruction and undermining of self-actualization (Pemberton, 2016), Zemiology provides a lens through which the emergent harms of digitality may begin to be acknowledged.

Through emphasising the centrality of harm production to the necessary functioning of corporate and state power, Critical Criminology's Marxist analysis paves the way for a critique of the corporation in the digital context. However, the extent to which Critical Criminology and Zemiology are equipped to approach the context of digitality and Big Tech corporate power remains to be seen. Despite increasing recognition of the emergent harms of the digital context, Critical Criminology has yet to include Big Tech among its harmful corporate entities meriting critique. This lack of critical attention has not gone unnoticed within the discipline (see Raymen, 2023:14), specifically when seeking to acknowledge harms emerging beyond the sociological focus of Zemiology (Pemberton, 2007). The capacity with which Critical Criminology and Zemiology can adapt to understand emergent harms of digitality, however, is the primary focus of this research. Zemiology's transformative capacity to the field of Critical Criminology is extended once

again within this research; in recognising Zemiology's sociological focus (Pemberton, 2007), the question of whether a differential lens can be adopted is raised – principally, a digital focus.

Outside of Critical Criminology, however, the rise of Big Tech to global significance since the late 20th century has garnered mounting critical attention, with many seeking to conceptualise the developments in mechanisms of capital accumulation that Big Tech has come to represent. This conceptualisation has taken various forms and stem from numerous disciplines and epistemological positions. Be this 'cognitive capitalism' (Moulier-Boutang, 2011), 'digital capitalism' (Fuchs, 2015), 'platform capitalism' (Srnicek, 2016), 'technofeudalism' (Varoufakis, 2023), or SC (Zuboff, 2019a), theories of capitalist development brought about by Big Tech continue to emphasise rising corporate power and shifts in mechanisms of capital accumulation. These perspectives are united by their emphasis on the role of data collection and analysis in capital accumulation; the centrality of user personal data and the expropriation of this to the generation of corporate profit. Of these perspectives, there is no stronger case made for the aggressive expansion of Big Tech corporate power through the encroachment of digital technologies into human life than that made within Zuboff's *'The Age of Surveillance Capitalism'* (2019a).

Zuboff defines SC as a 'new form of information capitalism [that] aims to predict and modify human behavior as a means to produce revenue and market control' (2015:75). Describing an economic system in which Big Tech corporations deal almost exclusively in the collection and analysis of user personal data expropriated from personal devices and online spaces, SC (Zuboff, 2019a) presents a framework within which neo-liberal capitalism has developed through the proliferation of digitality-enabled corporate power. Within this framework, Big Tech corporations are reframed as 'surveillance capitalists' (2019a:8) – emphasising the centrality of surveillance to profit generation. Further drawing upon Weiser's 'ubiquitous computing' (1991), Zuboff describes this system as operating through technology's pervasive presence – conceptualising this as the 'apparatus of ubiquity' (2019a:224) and the primary mechanism behind data extraction.

This serves the refinement of predictive analytics, the prediction of future user behaviour, through the analysis of behavioural data and categorisation of such behaviour into identifiable and marketable traits towards the aim of ‘guaranteed outcomes’ (2019a:201) for surveillance capitalists’ true customers – advertisers.

The threat to which Zuboff draws our attention is the ‘new and more complex means of behavior modification’ (2019a:19) this system affords surveillance capitalists. The collation and analysis of user personal data towards the refinement of predictive analytics presents the user as a behaviourist subject, with personal data being used to predict present and future online behaviour. Through granting advertisers real-time access to users’ digital spaces, predictive analytics are utilised to enhance targeted advertisements towards guaranteed purchase outcomes and web-traffic for advertisers (Zuboff, 2019a). Zuboff presents this as a process through which the human experience is reduced to marketable traits, as the functioning of this system requires that ‘Every level of intimacy would have to be automatically captured and flattened into a tidal flow of data points’ (2019a:199). The system of normalized, pervasive corporate surveillance and behavioural prediction and modification that Zuboff outlines presents a context in which the undermining of user autonomy is routine practice – ‘transforming volition into reinforcement and action into conditioned response.’ (2019a:279).

Ubiquitous within the public discourse of rising concerns around digital technologies is the language of ‘harm’; within the UK’s Online Safety Act (2023) the term appears 152 times as the act seeks to mitigate and prevent harms stemming from digital platforms and online content. However, whilst this is prevalent within political rhetoric concerning social media platform engagement, little scrutiny is turned to the digital context in which these specific technologies are situated – and how the harms stemming from this manifest. The ubiquitous presence of social media forms a small part of the wider digital context this research seeks to explore, instead turning attention towards the implications of a society under pervasive corporate surveillance. Moreover, little depth is provided regarding the word ‘harm’ in these instances, with explorations of this typically remaining within the realm of the physical and the psychological effects of digital technologies. In

the wake of this, Zemiology as the study of Social Harms (Hillyard & Tombs, 2004; 2007; Pemberton, 2007; 2016) holds the potential to investigate and understand the harms emanating from the digital context further, foregoing a simplistic view of the forms these harms take.

Acknowledgment of the digital's role in harm production remains in its infancy within Critical Criminology. Despite the rising profile of Digital Criminology (Powell, Stratton & Cameron, 2018), many works within this field remain focused on the utilisation of digital technologies for the enacting of criminal activities. Fields within this such as technology-facilitated violence (Mitchell et al., 2022) contribute valuable research to the recognition of the role digital technologies play in the production of harm. Specifically, within this lies a subset of research whose focus centres on the use of digital platforms for the enacting of violence and harm; studies of 'doxxing' (Anderson & Wood, 2021; 2022), the impacts of 'toxicity' in online spaces (Recuero, 2024), and the proliferation of non-consensual sexual 'deepfakes' (Bailey et al., 2021) all speak to emergent harms emanating from digital technologies. Among this work we begin to find recognition of technology's role in the production of harm outside of an instrumental focus. Through the utilisation of Postphenomenology (Ihde, 1990), Wood (2021) expands our understandings of harms deriving from technologies through considering human-technology relations. In the wake of this analysis, the potential to develop this further towards an understanding of human-digital relations, and thus conceptualise the harms of digitality and SC, emerges.

Zemiology for the Digital Context

Within this context, we face the need for a deeper understanding of what the digital means for studies of harm – and what studies of harm mean in the digital context. By interrogating the intersection of digitalization and harm production, this thesis will present a rigorous case for the need of a digitally-embedded Zemiological theory. By using Zuboff's theory of SC (2015; 2019a; 2019b) as a lens through which to begin formulating the emergent harms of the digital context, the urgency with which such a

framework of harm is needed is made clear. By first analysing the applicability and limitations of Critical Criminology and Zemiology in the digital context, it becomes apparent that the discipline holds great potential in the acknowledgement and analysis of digitality – despite this remaining often overlooked as a site of analysis. This research therefore seeks to invite Zemiology, and wider Critical Criminology, to embrace an interdisciplinary approach in addressing the harms of digitalization. In going beyond the realm of social harm to investigate the routine undermining of human autonomy that Zuboff's theory of SC describes, this research presents both an invitation to and exploration of Digital Zemiology. This research's main contribution to the field is therefore theory generation; providing valuable developments to studies of harm and the digital context through the conceptualisation of the Digital Zemiology framework.

Through an interdisciplinary approach, this research further contributes to knowledge production outside of Critical Criminology and Zemiology. By engaging with Surveillance Studies (Haggerty & Ericson, 2000; Lyon, 1993; 2002; 2007; Murakami-Wood, 2007), Postphenomenology (Ihde, 1990; Latour, 1996; 1999a; 1999b, Verbeek, 2005; 2011), and Digital Materialism (Floridi, 2023; 2024), developments are made to theoretical knowledge concerning the digital condition. Primarily, a distinction is formed between the technological and the digital; addressing both operational and ontological differentiation which serves to increase understanding of surveillance, human-digital relations, and the digital's materiality beyond those captured in the works explored within this thesis. Moreover, this thesis emphasises the value in aligning Zemiological enquiry with these disciplines; as the insights garnered from Surveillance Studies and Postphenomenology prove invaluable in the confronting of digitality and the conceptualisation of Digital Zemiology.

This research also introduces to wider Critical Criminology the fast and ultra-fast fashion industry as a site of critical analysis. Having begun this research seeking to explore the social harms of the fast fashion industry, and this being the subject through which an analysis of the digital became necessary, the fast and ultra-fast fashion industry is further utilised in this research as a digital-context specific case study through which to identify

emergent digital harms. Chapter 8 adopts an exploratory approach to analyse the social harms and further digital harms of the industry, firstly making the case for a traditional Zemiological understanding before developing this toward Digital Zemiology. Despite the industry being subject to wide critical attention, including countless media exposés (see *The True Cost*, 2015; Channel 4, 2022) and triggering the forming of numerous fashion sustainability initiatives (see Labour Behind the Label, Clean Clothes Campaign, and Fashion for Good), very little attention is given to this industry within Critical Criminology (see Simončič, 2021). This research therefore further introduces a novel and contemporary area of study to the discipline.

Research Aim and Scope

This critical context leads to the fundamental aim of this research:

To understand and assess the applicability and limitations of, and emerging opportunities within, Critical Criminology addressing Digital Harms.

Throughout the thesis this aim is addressed through the following research questions:

- 1. To what extent can Critical Criminology speak to the digital context?**
- 2. What are the key theoretical components of Surveillance Capitalism?**
- 3. What are the limitations of Zuboff's Surveillance Capitalism?**
- 4. How, if at all, can these limitations be overcome?**
- 5. What developments are required of current Critical Criminological theory to embed an understanding of 'Digital Harm'?**
- 6. How has Critical Criminology previously engaged with harmful human-technology relations?**
- 7. How has Postphenomenology been utilised in conceptualisations of harm?**

8. To what extent can a distinction between the technological and the digital be drawn?
9. How can this then be used to consider a digitally-embedded approach to harm production?

In the answering of these questions, this research takes a user-centred approach that is situated within human relations to digital technologies and the context of digitality in which these relations take place. In this way, this research is limited only to attempting to explore the experience of users within Western Europe, the UK, and the US due to the research methodology utilised. Where necessary, these limitations shall be discussed throughout the research with specific recommendations being made regarding the future research agenda of developing this approach.

This research took place from February 2021 to August 2024. Due the rapid advancement of digital technologies in the final year of this thesis, particularly in the arena of generative artificial intelligence, there are aspects of the digital context that have not been able to be captured by this analysis. Where these gaps are relevant, this shall be addressed in the text with specific additions being made to the conclusion of this research.

Thesis Structure

This thesis takes a three-part structure; comprising of **Part 1: Explorations**, **Part 2: Applications**, and **Part 3: Implementation & Implications**.

Part 1: Explorations comprises an exploratory approach which seeks to address the applicability and limitations of Critical Criminology in the acknowledgment of the emergent harms of the digital context. By exploring Zuboff's *The Age of Surveillance Capitalism* (2019a) and the utility of Critical Criminology in addressing the context of Surveillance Capitalism, Part 1 serves to highlight the developments needed to align these approaches. This comprises four chapters that break down this aim as follows.

Chapter 1 explores the value of Marxist Critical Criminological frameworks in understanding the digital context. Engaging with works within corporate crime (Tombs & Whyte, 2015; 2020), state/corporate crime (Michalowski & Kramer, 2006; 2007), and Social Harm (Hillyard & Tombs, 2004; Pemberton, 2016), this chapter seeks to explore the applicability and limitations of utilising these perspectives in the acknowledgment and analysis of the digital context. Whilst this analysis recognises that Critical Criminology and Zemiology demonstrate utility in addressing the digital context, numerous shortcomings are identified which leave analytical frameworks stunted when tasked with a deeper evaluation of Big Tech corporate structures, state/corporate relations in the digital context, and emergent harms which speak to a level of harm production beyond the social. This chapter produces three primary themes for further exploration: (i) the digital, (ii) control, and (iii) autonomy. In recognising that digitality denotes a changing context in which harm is produced, opportunities for theoretical development emerge – concluding that for Critical Criminology and Zemiology to recognise the emergent harms of digitality, an interdisciplinary lens is needed to embrace areas of study that have long investigated issues stemming from digitality.

Chapter 2 establishes an understanding of Zuboff's Surveillance Capitalism (2019a; 2019b); outlining the economic logic of surveillance and modes of extraction that are enabled through digital technologies. Following this, this chapter explores the ideological distinctions Zuboff draws that distinguish Surveillance Capitalism as an unprecedented mode of power; seeking to understand the underlying collectivist ideology of surveillance and data analytics, and the instrumentarian power structure through which this operates. This is then followed by a justification for the use of Zuboff's work to answer this thesis's research question, highlighting other frameworks of capitalism in the digital context that were explored and the rationale for utilising Surveillance Capitalism for this research.

After establishing this understanding of Zuboff's work, **Chapter 3** addresses the limitations of her approach. In this chapter, I will address the absence of works from within Surveillance Studies in the conceptualisation of Surveillance Capitalism,

exploring the many developments to Zuboff's framework that can be found within the discipline. This is followed by a critique of technological determinism as it manifests within Zuboff's work, highlighting the agentic implications of Zuboff's framework and the need for this to be explored further. This chapter then goes on to develop Zuboff's conceptualisation of capitalism; by engaging with Marxist perspectives, we arrive at a nuanced understanding of Surveillance Capitalism as producing surveillance capital and move toward a view of this as a form of capital distinct to the digital context, yet existing within the broader capitalist context. This then leads into addressing Zuboff's claim of Surveillance Capitalism as unprecedented, instead arriving at an understanding of this as a developed form of capitalism with a distinct historical precedent from which it has formed. The following two sections explore the epistemological and ontological assumptions embedded within Zuboff's approach, highlighting the paradoxes that are conveyed within how Zuboff's portrays surveillance capitalists as understanding knowledge and reality, and how she conveys her own positions of this. Finally, this chapter closes by addressing the underdeveloped discussion of resistance in Zuboff's work, emphasising the need for a greater focus on the forms that this can take and a more nuanced understanding of the implications of digitality for resistance.

Chapter 4 then seeks to understand what developments are needed within the Critical Criminological perspectives discussed in Chapter 1 to address the emergent harms of digitality. After exploring the implications of Zuboff's work for these perspectives, this incorporates the Digital Criminology perspective to begin to understand how Critical Criminology has understood the digital context. This culminates in the recognition of the need for an approach to studies of harm embedded in the digital context, and ultimately the need to develop a framework of **Digital Zemiology**.

Part 2: Applications primarily aims towards establishing an in-depth knowledge of human-technology relations as they pertain to the pervasive digital surveillance discussed by Zuboff. Through this, these discussions seek to identify emergent key concepts of harms emanating from the digital context; pertaining to those that stem from human interactions with digital technologies and those that are specific to the digital

context as an era proliferated by networked digital devices. Part 2 further seeks to begin to apply these emergent key concepts to a case study that is specific to the digital context, beginning the process of refining this theoretical approach through its operationalization. Therefore, Part 2 consists of four chapters that each address and further these primary aims.

Chapter 5 establishes the methodology of this research. By utilising abductive analysis as a ‘recursive process of double-fitting data and theories’ (Timmermans & Tavory, 2012:179), a methodology is established which draws upon the in-depth theoretical knowledge explored in Part 1 of this thesis. Using this as the basis upon which emergent concepts can be identified and developments to theory made, Chapter 6’s key concepts can be applied within this research as a method of theory generation. This chapter then establishes the exploratory case study method through which this shall take place. By utilising the ultra-fast fashion industry as a digital context-specific case study, we return this research to the arena within which Digital Harm first manifested as a site of analysis. The research design of this case study is outlined, establishing the scope of analysis and further addressing the barriers to analysis that presented themselves throughout this process.

Chapter 6 seeks to establish a deeper understanding of human-technology relations considering SC’s technological determinism. By considering the relevance of technology to Critical Criminology, we can begin to realise how Critical Criminology has sought to understand the role of technology in acts of crime, policing, incarceration, and crime prevention. From this discussion, we find that technology is understood superficially within this context with an emphasis on technology’s role in the committing of crimes and an outdated emphasis that reinforces a binary between online and offline spaces. From here, this chapter goes on to explore the relevance of human-technology relations to understandings of harm production. To do so, it is necessary to engage with works within **Postphenomenology** (Ihde, 1990; Verbeek, 2005; 2011) and **Actor Network Theory** (Latour, 1999b) as approaches which seek to understand human/technology dynamics. After establishing this contextual knowledge, we further this by discussing

how works from within Postphenomenology have been utilised within Critical Criminology; exploring the work of Wood (2021; 2022; Wood et al., 2023) and understandings of harm production within **human-technology relations**. The question arising from this discussion is how this approach can be developed towards a specific focus on digital technologies, in which surveillance plays a key role in the functioning of digital technologies and therefore understand how this impacts human relations to the digital.

Chapter 7 moves to develop this approach towards an understanding of **human-digital relations**. By first considering whether it is possible to draw distinctions between the technological and the digital, we arrive at a distinct conceptualisation of the digital as a development of the technological in which four primary markers differentiate digital technologies from those typically discussed within Postphenomenology. This leads to the first conceptualisation of key digital concepts; providing a foundational framework of **digitally-facilitated** and **digitally-mediated harms**, whilst further recognising **enforced digitality** as a marker of the digital context.

Chapter 8 explores the ultra-fast fashion case study. Firstly, this establishes the critical context of the traditional fast fashion industry, utilising the Social Harm approach to bring Critical Criminological awareness to a harmful global industry that has yet to merit analytical scrutiny. This outlines the widely documented environmental harms, labour violations, and impacts to consumers of the fast fashion industry. Following this, a distinction is made between fast fashion and its digitally-developed form of ultra-fast fashion. Through this, we understand ultra-fast fashion as being enabled by the proliferation of digital technologies and modes of corporate surveillance, with this enabling an increased efficiency of capital accumulation. From this point, digitally-facilitated and digitally-mediated harms are applied to the evidencable harms of the ultra-fast fashion industry. Through this, we arrive at an understanding of digitally-facilitated harms as intensifying the harms identified through fast fashion and Social Harm; as digital technologies allow these harms to be produced more efficiently whilst a digitally-enabled supply chain increases rates of production and consumption. Following

this, digitally-mediated harms begin to identify those harms that lie beneath the social realm – moving our understandings towards a recognition of cognitive harms.

Part 3: Implementation & Implications aims to move towards consolidating findings from theoretical discussions and the case study application. Part 3 of this research therefore seeks to explore the implications of this research's discussions so far, moving this towards the formation of a theory of Digital Zemiology. Part 3 is split into two parts; **Chapter 9** will address the insights from Chapter 8's ultra-fast fashion case study before consolidating this into a theory of Digital Zemiology and addressing the limitations of this approach, and **Chapter 10** will address the question of resistance to digitality, considering whether resistance is possible and, if so, who this is possible for.

Chapter 9 takes a three-part structure; firstly, providing a concise discussion of the insights from Chapter 8's case study and emphasising the cognitive harms that stem from digital-mediation in this context, before revisiting the process of abductive analysis for theory generation to provide an understanding of how these insights are used to generate a theory of Digital Zemiology. The following section explores the emergent harms prevalent throughout this research; making the case for moving towards an understanding of Social Harms as stemming from digital-facilitation, and formalising the cognitive harms stemming from digital-mediation. From this latter discussion, we arrive at a three-pronged approach to **cognitive harms**, comprising of **self-relational**, **agentic**, and **autonomy** harms. The final section of Chapter 9 discusses the limitations of this approach, acknowledging the limited scope of the case study, the absence of user voices within this, and the methodological issues that stem from a conceptualisation of cognitive harms.

Chapter 10 interrogates the notion of resistance in the digital context. By undertaking a user-centred focus to resistance tactics – exploring this in the forms of **obfuscation** (Brunton & Nissenbaum, 2016), **disruption**, and **disengagement** (Kuntsman & Miyake, 2022) – to explore the implications of **enforced digitality**, we arrive at an understanding of resistance as a luxury only available to a minority. This is then followed by the complex

notion of digital resistance itself, which serves to legitimise the acceptance of and engagement with the digital as the norm. Through the lens of **digital inequality**, we then start to understand the immense labours involved in digital resistance tactics, requiring great organisation and a constant effort to maintain. This leaves this discussion in a place which questions the implications of **‘bridging the digital divide’** and what this then means for communities without the privilege to disengage. Amid this bleak understanding of digital resistance, we further turn toward the potential of **abolitionism as resistance**, in which corporate abolitionism, whilst remaining a utopian ideal, presents opportunities for protection from Digital Harm beyond those offered by current legislation. Lastly, Chapter 10 closes with a discussion of reconceptualising digital resistance through **critical engagement**. Whilst recognising enforced digitality, the short-term strategies offered by previously discussed resistance efforts, and the barriers presented by legislative efforts amid different jurisdictions and corporate economic power, critical engagements presents a way to question the normalization of digitality. Through education of digital systems and engaging users in discussions of surveillance capital and data rights, we can begin to bring users into positions that work to disrupt the asymmetries of power and knowability between Big Tech corporations and the users themselves.

The conclusion of this thesis speaks to the work still to be done in the formulation of Digital Zemiology. In recognising that this thesis is but the beginning of this field of study, a research agenda is outlined which establishes key priorities to be investigated further in the conceptualisation of Digital Harm. This agenda seeks to take future research further than the scope of this current project has allowed, recognising the need to centre the voices of users in discussions of Digital Harm and those who engage in active non-use of digital technologies to further understand human-digital relations. Furthermore, the need to engage with global perspectives and voices of the Global South to take this analysis outside of its Global North evaluations and investigate the impacts of Western corporate expansion in the Global South. Lastly, this agenda establishes the need to engage with industry experts and those with technical knowledge of the digital technologies themselves, not only to further our considerations of digital technologies

and the possible avenues of resistance but also to understand the impacts of such knowledge on the human-digital relation.

Part 1:

EXPLORATIONS

Chapter 1: Critical Criminology in the Digital Context

The digital context produces numerous avenues for Critical Criminological enquiry. The conceptualisation of ‘digital harm’ explored within this thesis’s Introduction produces three key themes that directly correlate to key frameworks within Critical Criminology: corporate crime (Tombs & Whyte, 2015; 2020), state/corporate crime (Michalowski & Kramer, 1987; 2007), and Social Harm (Hillyard & Tombs, 2004; 2007; Pemberton, 2007; 2016). These frameworks speak to the key themes of Digital Harm identified previously: the emergence of the Big Tech corporation, the persistent failure of the State to regulate Big Tech corporate conduct, and the many socially harmful implications of this. Furthermore, these three perspectives are united by a Marxist approach, providing valuable insights into the socially harmful impacts of Capitalism in the era of Big Tech. Within this section, each of these frameworks shall be utilised as a lens through which to view Digital Harm, exploring the ways in which Critical Criminological enquiry, as it stands, can facilitate an understanding of digitality and digital harm.

The research question of this chapter is as follows:

1. To what extent can Critical Criminology speak to the digital context?

The exploration of each of these frameworks shall aim to address their **applicability** and **limitations** in acknowledging the digital context, whilst further seeking to identify the **opportunities** for development within them.

1.1 Corporate Crime

Given the role of 'Big Tech' corporations in the pioneering and proliferation of digital technologies, and the emergent harms emanating from this, the perspective of corporate crime provides an instinctive starting point for a Critical Criminological understanding. Studies of corporate crime seek to scrutinise the harmful effects of corporate conduct, incorporating acknowledgments of illegal actions and deliberate decision-making or negligence which are committed on behalf of the corporation or in pursuit of its goals (Pearce & Tombs, 2019; Tombs & Whyte, 2020). This definition itself aims to step outside of a focus on legal frameworks and acknowledges that harmful corporate actions are not simply those that are a consequence of law-breaking but can further be seen in actions of omission and negligence of the wider effects of business conduct. Through this, studies of corporate criminality have sought to develop an understanding that is not singularly focused on determining intentionality behind harmful corporate actions and instead allow for the role of preventability to be recognised. As highlighted by Tombs and Whyte (2015), whilst injury or damages resulting from, for example, health and safety negligence may be intentional in the pursuit of profit by cutting corners, the resulting injuries and deaths can rarely be seen as an intentional consequence. Through this need to step outside of a strictly legal framework and recognise the role of preventability, corporate crime has been conceptualised in the following forms: financial crimes, crimes against the environment, crimes against workers, crimes against consumers, and crimes of globalisation (Tombs & Whyte, 2020). Within the parameters of these categories of corporate crime we can find acknowledgement of certain actions of Big Tech corporations as being harmful.

Financial crimes are as prevalent within Big Tech corporations as they are within more 'traditional' corporations – countless cases of market monopolisation (see BBC News, 2023; Sherman, 2023) and tax evasion (see BBC News, 2020; Butler, 2023; Jolly, 2023) have been brought against such corporations. Crimes against workers are similarly just as prevalent, with concerns raised for the working conditions and expectations of

Amazon employees (Sainato, 2023) as well as for workers within factories manufacturing for Apple (Merchant, 2017). Crimes against the environment is a further arena within which Big Tech corporations are inflicting widespread harm. The environmental cost of seemingly infinite digital archives held by Big Tech corporations have long been a point of concern (Hogan, 2018; Lucivero, 2020; United Nations Environment Programme, 2024), with the energy consumption required for cloud storage being a key driver of this. Within these areas, Big Tech corporations can be seen to inflict harm in similar ways to corporations within other industries.

Crimes against consumers allows for a potential acknowledgement of the harms felt by users of digital technologies, recognising these as being a result of criminogenic corporate actions. However, this requires a bit of adaptation as this form of corporate crime is typically orientated around illegal market practices or the selling of unfit/mislabelled goods through commercial transactions (Tombs & Whyte, 2020). This has the potential to be extended to the area of 'services' as opposed to focusing on products, allowing for harmful consequences of digital services to be recognised. Numerous cases have been brought against Big Tech corporation Meta arguing that the company's digital services have widespread adverse effects on the mental health of their users (see Harrison, 2023; Sherman & Clayton, 2023), with accusations positing that Meta has long been aware of these effects yet continually fails to address them. Within this framework, such instances perfectly align with the negligence recognised in definitions of corporate crime and allows for a move away from an 'intentionality' based understanding and toward a 'preventability' informed approach. Such harms to consumers resulting from digital services cannot be seen as an intentional action, however accusations of negligence in the face of increasing knowledge of these harms further advocates for a preventability focus for these to be recognised.

Criminological conceptualisations of the harmful corporation have already drawn attention to their ubiquity in our daily lives; with necessities required for sustaining life such as food, clothing, and communications being entirely provided by or facilitated through such entities (Tombs & Whyte, 2015). Attention is drawn to the 'synoptic' society

(Mathiesen, 1997), as, whilst the corporation observes and analyses consumer behaviour, the corporation is ever at the centre of consumer attention and desires (Tombs & Whyte, 2015) leading to their unquestioned acceptance as a natural presence within everyday life. It is through this widespread acceptance – paired with vast economic leveraging power, market dominance, and international scope – that the harmful actions of corporations largely go unnoticed or are accepted. However, Tombs and Whyte (2015) argue that such harmful effects of corporate conduct are not *consequences* of big business activities, but are ‘enduring and necessary functions of the corporation’ (2015:4). From this alone, the applicability of a corporate crime framework to Big Tech is clear. Corporations such as Meta, Google, Apple, Amazon, and Microsoft consistently sit among the most profitable international businesses in yearly revenue. In 2022, Meta generated 116 billion US dollars in revenue with 113.6 billion US dollars of this being generated from advertising alone (Meta, 2023). In the same year, Google generated 279.8 billion US dollars in revenue with 224.47 billion US dollars stemming from advertising (Statista, 2023). Considering these figures, it is clear to see that Big Tech corporations generate vast amounts of financial revenue from their pervasive marketing. Utilising the work of Whyte and Tombs (2015), it becomes apparent that the harmful effects of digitality (Negroponte, 1995) are necessary for the generation of these revenue figures. Such annual revenues being generated through advertising could not be achieved without invasive data collection and the undermining of autonomy through targeted advertising.

The corporate crime framework allows for the recognition of Big Tech corporations as harmful entities, creating a space within which their actions can be analysed and scrutinised. However, this framework fixates our focus on the *actions* of such corporations – to the comparative neglect of digitality and digital harms more broadly. This runs the risk of focusing on problematic corporations within this system and ignores the deeper nuances this research seeks to explore. In the same way, to focus on such a category as ‘crimes against consumers’ is to further narrow our focus toward products or services seen as problematic, as opposed to orientating this analysis around the system which came to produce and facilitate the prevalence of digital harm. Furthermore, the

corporate crime framework focuses our attention on the actions of Big Tech corporations which fall within the parameters of 'crime'. Instilling such a crime-centric framework into a Critical Criminological understanding of digital harm falls short in the recognition of the *harmful* effects of this system, not least due to the realisation that – until very recently with the introductions of the General Data Protection Regulation (EU) (Council Regulation (EU), 2016), the Digital Services Act (EU) (Council Regulation (EU), 2022), and the Online Safety Act (UK) (HM Government, 2023) – the activities of Big Tech corporations were largely unregulated and lay outside of legal frameworks. Scrutiny of this focus on legal regulation is prevalent within studies of corporate crime, as such a focus can be seen to serve economic interests and sustain the harmful practices of Capitalism rather than challenge this. As Tombs and Whyte state: 'the effect of legal regulation is to ensure that capital—in the form of the corporation—continues to reproduce itself regardless of its deleterious effects on the capacity for human life to reproduce itself.' (2020:18). From this, it is important when constructing a Critical Criminological understanding of digital harm that a wider lens is utilised which allows for the recognition of the wider context within which the Big Tech corporation sits – digitality (Negroponte, 1995). For this reason, the enduring role of the State as a regulator and a facilitator of this system must also be scrutinised.

1.2 State/Corporate Crime

The state/corporate harm framework situates the harms of corporate conduct within the geopolitical context of corporate relationships with the state. Stemming from the work of Richard Quinney (1977), the framework of state/corporate crime is concerned with the political and economic processes which enable state and corporate actors to pursue and enact practices and policies that result in financial loss, cultural destruction, personal injury, and death (Kramer, Michalowski & Kauzlarich, 2002). This offers a critical perspective on 'the intersection of the interests of capital and the interests of the state' (Kramer, Michalowski & Kauzlarich, 2002:266). The emergence of this framework sought to investigate the ways in which corporate power can be utilised to shape national and

international laws and legislation within the context of emergent globalisation (Michalowski & Kramer, 1987). This rests upon the recognition of crime possessing no ontological reality, and that the social process of naming ‘crime’ is shaped by those with the economic and political power to ‘ensure that the naming of crime in most instances will reflect, or at least not seriously threaten, their worldview and interests’ (Kramer, Michalowski & Kauzlarich, 2002:266). Therefore, the study of state/corporate harm must look beyond behaviours formally designated by law to be treated as crime to instead incorporate equally harmful actions that are deemed as acceptable, or are responded to lightly, by the judicial system (Kramer, Michalowski & Kauzlarich, 2002). This leads to the recognition of the metabolic relationship between the corporation and the state; the corporation could not function as it does without the legal, economic, and political infrastructure provided by the state. Likewise, the state heavily depends on the corporation to provide products and services that support the economy and employment. The role of the state in this metabolic relationship of harm production can be seen to take two forms: one in which the state acts as an initiator of harm and one in which the state is a facilitator of harm (Michalowski & Kramer, 2006; 2007). A further way to frame this would be as state *action* and state *inaction* in the production of harm, with these terms speaking to initiation and facilitation respectively (Tombs & Whyte, 2020).

From this standpoint, we can begin to see the role that the state plays as both a facilitator and an initiator of digital harms. Similarly to the state’s role as a facilitator of harms within other industries, the failure to regulate the conduct of Big Tech corporations correlates to a facilitation of the continuing harms stemming from digitality. The failure to regulate can be seen both domestically and internationally; despite many current Big Tech corporations being founded in the late 20th century, legislation with the aim of protecting online users has only recently come to fruition. The Online Safety Act 2023 (HM Government, 2023), Data Protection Act 2018 (HM Government, 2018), Digital Services Act 2022 (Council Regulation (EU), 2022), and General Data Protection Regulation 2016 (Council Regulation (EU), 2016) all seek to protect users from digital harms, albeit with differing focuses from data collection to psychologically harmful online content. Yet all have faced criticism for the numerous missed opportunities to enforce corporate

responsibility within the legislation (Nash & Felton, 2023). Further criticisms stem from the legislation taking a 'soft' law approach in which the verdict of what constitutes 'harmful' content is left to criteria decided and enforced by the corporation alone – allowing for increasing corporate control, diminishing both state and community input, and lacking consistency between online platforms (Tregove, et al., 2022). Such soft approaches to legislation, or the entire lack thereof as is often the case outside of the UK and EU, allows for corporate conduct to continue without major resistance or repercussions.

The lack of appropriate legislation continues into the international arena; Big Tech activities take place on a global scale, impacting users both within and outside of the corporation's domestic landscape. Despite this, there is yet to be either a unified legislative approach to regulate the activities of Big Tech corporations, or legislation within the domestic states from which Big Tech operates, that calls for accountability at a global scale. From this point, we can return to the work of Tombs and Whyte (2020) and the recognition of the harms of globalisation. This form of state/corporate harm directly recognises the role of geopolitical relations in the perpetuating of harm and draws attention to the role of the state as continuing to facilitate injurious conduct on a global scale. Tombs and Whyte (2020) utilise the terms 'globalisation' to describe the internationalization of neoliberalism, drawing attention to the role of neoliberal fatalism (Tombs, 2007) in encouraging state deregulation of corporate activities to facilitate 'free market' capitalism and incentivise corporate investment in foreign markets. In this way, the harms experienced in the wake of deregulation can directly be attributed to the state/corporate relationship – as the act of deregulation or the failure to enforce existent legislation reflects state facilitation of injurious corporate conduct. It is within this era of deregulation that the rise of Big Tech dominance took place and furthered the international economic dominance of the Global North.

The state can further be seen as an active initiator of harms within the digital context through the adoption of Big Tech mechanisms of behaviour monitoring and data analysis. This assimilation ranges from subtle to overt; at one end of the scale the use of internet

cookies is as prevalent across government websites as any other and comprises an often-unnoticed adoption of soft digital monitoring tactics. Furthermore, the increasing digitalization of government services further instils processes of data collection and analysis, and technological reliance, into the operations of the state (Cabinet Office, Government Digital Service, & The Rt Hon Lord Maude of Horsham, 2012). However, a more overt adoption can be seen in the use of surveillance techniques via smart phone applications to track COVID-19 infections through the NHS Track and Trace app in England and Wales from September 2020 to April 2023 (UK Health Security Agency, 2022). The network capabilities of this technology were made known through this government use: users were encouraged to log their COVID-19 rapid lateral flow test results via the NHS Track and Trace app, in doing so other users were alerted, via push notifications, of their risk of infection if they were within a certain radius of the individual with a positive test result or if the app had tracked contact between the two individuals within a certain time span of the positive test result (UK Health Security Agency, 2022). This demonstrates an overt adoption of technological monitoring techniques by the state and a utilisation of these mechanisms to monitor not only COVID-19 test results, but also the geographical whereabouts, movements, and social relations of individuals – even whilst the app was not in active use. The NHS Track and Trace app encouraged users to consent to state monitoring and analysis of their data for the ‘greater good’ of infection prevention, utilising not only the technological mechanisms of Big Tech corporations but further mirroring the justifications often given in the face of user privacy concerns. This provides an illustrative example of the state’s adoption of data collection and monitoring techniques in England and Wales, as well as the utilisation of digital technologies to conduct covert surveillance. To scrutinise the context and efficacy with which these practices were adopted lies beyond the scope of this thesis, nor does this work intend to engage with these debates. However, this does provide an example of the state as an initiator of the digital surveillance practices being explored within this thesis.

From this discussion, the utility of the state/corporate harm perspective in speaking to the context of digital harm is apparent. In recognising the intertwined relationship between the state and Big Tech corporations, the state/corporate framework furthers our

understandings of the power structures within which harm production is situated and the international scale at which this operates. However, in seeking to look beyond problematic actors in the enacting the digital harm, we must once again adopt a broader perspective to fully realise the implications of digitality for harm production.

1.3 Social Harm

This chapter has thus far explored frameworks through which the actions of state and corporate actors within the digital context can be recognised as harmful. However, whilst this has been constructive in the acknowledgment of harmful corporate and state actions and inactions, this has been limiting in acknowledging harms resulting from the wider *structure* of digitality. The conceptualisation of Digital Harm formulated in this thesis's Introduction points to a systemic production of harm that requires a look beyond the conduct of corporations and states to reflect a societal shift in causative mechanisms of harm production. In this regard, corporate crime and state/corporate crime offer critical insight into the roles of actors in the proliferation and perpetration of digital harms but fall short in understanding the deeper nuances presented by digitality. To add to this, numerous obstacles arise in the application of a 'crime'-based framework to the digital system. Primarily, the undermining of human autonomy inherent in the pursuit of Big Tech profits lies outside of a 'crime' framework – the actions involved in the acquiring of user data and the use of this for algorithmic influence are not done so illegally but are 'consented' to as a prerequisite for using online platforms, be this with overt user knowledge or not. The standard operations of the devices and online platforms in question do not centralise their profit generation around activities that fall under the terminology of illegality or crime, instead operating within the bounds of legality to accomplish this. Furthermore, these observable actions are symptomatic of a wider, macro-level systemic change in societal power structures that escapes conceptualisation through these frameworks. Therefore, the Critical Criminological perspectives explored limit an understanding of digital harm within the parameters of legal and illegal action, failing to account for the operations of a system which

perpetuates harm based on legality and ‘consent’. To amend this, a further avenue for Critical Criminological enquiry may provide the systemic approach through which this can be incorporated into a critical understanding of digital harm.

The Social Harm perspective has long advocated for critically understanding the conceptions of crime and criminalisation, the need for a move away from the ‘crime’-centric, and toward a disciplinary approach centred around the conceptualisation of harm. Hillyard and Tombs (2004; 2007) present a robust case of the limits of Criminology in giving representation to the full array of harms experienced within society, and the ways in which a harm-orientated approach holds a transformative capacity for critical enquiry. As has been touched on previously, the process of naming crime has long been seen to be a practise afforded to those with the economic and political power to see their interests go unobstructed (Kramer, Michalowski & Kauzlarich, 2002). Hillyard and Tombs (2004; 2007) take this critique even further, utilising the terminology of Hulsman (1986a; 1986b) to emphasise that crime possesses no ontological reality and is a malleable concept dependent upon ever-changing political and economic interests. This is seen to serve the upholding of existent power structures, maintaining social inequalities through enforcing an individualising focus which ignores structural determinants preceding harmful events.

This allows for a continued focus by the criminal justice system on ‘petty’ crimes operating at street level, to the comparative neglect of widespread and higher-level harms – such as those highlighted by the prior frameworks explored. Through recognising this, the Social Harm approach reorientates the underlying priority within this line of enquiry. Whilst Traditional Criminology utilises a common-sense moral hierarchy in which acts of intent are analytically prioritised over acts of indifference (Box, 1983), this serves to limit the scope of critical knowledge to acts of intentional harm. The Social Harm perspective, however, broadens this to instead allow for the recognition of the preventable. This rationale proves beneficial in developing a critical understanding of digital harm for numerous reasons; not only does this allow for our understanding to surpass the limitations of a ‘crime’-centric perspective, but further allows for the deeper

harms sought to be explored in this research to be solidified within Critical Criminological knowledge and understanding. To further evaluate the applicability of the Social Harm perspective to digital harm, two dominant theories of Social Harm shall be explored in more detail.

The inaugural framework offered by Hillyard and Tombs (2004) establishes four categories of Social Harm: (i) physical, (ii) psychological and emotional, (iii) cultural, and (iv) financial and economic. These categories were formed to encompass the ‘wide range of events and conditions that affect people during their life course’ (2004:19), maintaining a purposeful broadness to allow for a range of harms to be recognised and for the definition of harm to be a continuous process constituted by its operationalisation. Not only does this allow for a departure from the top-down processes dominant in crime frameworks, but allows for definitions of harm to be informed by the perceptions and experiences of those with lived experience (Hillyard & Tombs, 2004; 2007). Within this framework, a range of the harms inflicted through digitality can be allocated to these categories. Prior research has highlighted the widespread psychological and physical harms of online platforms (Keles, McCrae, & Grealish, 2020; Gewirtz-Meydan et al., 2023; Mishna et al., 2023; Rounsefell et al., 2020; Vitis & Gilmour, 2017), emphasising the risks posed to young people online in the wake of increasing rates of depression, anxiety, body dysmorphia and eating disorders, and online sexual harassment (Davis, 2024).

Furthermore, numerous campaigns calling awareness to the proliferation of online financial scams illustrate the economic harms prevalent within online spaces with romance scams forming a prevalent sub-type of this (Whitty, 2019). These harms, and the research supporting this, demonstrate the ability of Hillyard and Tombs’ framework to give definition to harms experienced within the digital context and through digital technologies. However, considering the deeper levels of harm this research seeks to understand, the harm explored within these categories seem to only a starting point regarding the implications of digitality for users. Whilst this framework is beneficial for

the recognition of the harms felt by users of digital technologies, the nuances of infringements to autonomy are difficult to materialise within these categories of harm.

Considering this, a further framework is offered by Pemberton in *Harmful Societies* (2016). Within this a ‘human needs’-based approach is taken in which harms are identified as inflicted when fundamental needs are not met – be that through **interference** or **obstruction**. From this standpoint, three categories form: (i) emotional and psychological, (ii) relational, and (iii) autonomy harms. The category of emotional and psychological is in-keeping with the framework offered by Hillyard and Tombs (2004; 2007), however it is the categories of relational and autonomy harms that allow for the discussion to develop further. Pemberton defines relational harms as taking two forms: ‘enforced exclusion from social relationships’ and ‘harms of misrecognition’ (2016:30); both of which are prevalent within the digital landscape. Firstly assessing relational harm in the form of enforced exclusion, this can be identified in the potential barriers digitality presents to meaningful human connection. The linguistics of dominant social media platforms alone encourages the acceptance of these barriers – with the notion of ‘sharing’ (John, 2016) and definition of ‘friends’ (see Johnston et al., 2013; West, Lewis, & Currie, 2009; Ellison, Steinfield, & Lampe, 2007) having changed in the wake of social media platforms.

Far removed from their initial utilisations, these terms take on new meanings within the digital sphere which reframe the terminologies of social interaction and encourage technological reliance in their expression. Sjolie, Olsen, & Hempel (2023) investigate the impacts of social media on the quality of both online and offline relationships in secondary school students, noting that the digital architecture of social media platforms encourages surface-level online ‘affiliations’ as opposed to deeper offline ‘attachments’ – with this being particularly concerning for those whose relationships are primarily online-based. This further raises concerns for social competence, as participants identified the increasing digitisation of their own interactions through reliance on photographic and videographic material via social media platforms, and the comparative decrease in physical interactions and verbal communication. The physical presence of a

digital device has further been found to be a barrier to human connection, negatively impacting the perceived quality of interaction between individuals (Vanden Abeele et al., 2016). The behaviours encouraged through digital technologies can therefore be seen to enforce exclusion from *meaningful* social interactions, forming a relational harm that is distinct to the digital context and surpasses the boundaries of a harmful event to instead focus on the system that reproduces these effects.

The relational through the lens of harms of misrecognition can further be identified within the digital context. Pemberton (2016) explores this concept through the lens of enforced public personas and stigmatization resulting in otherization. It is through the conceptualisation of enforced personas that we can situate harms of misrecognition unique to the digital context. The collation of user data enables the analysis, categorisation, and commodification of users own personal attributes, attitudes, and behaviours. This serves to reduce the facets of users to their marketable attributes – comprising a harm of misrecognition through the ways in which users’ own identities are reduced and commodified, comprising an enforced identity assumed of users, often without awareness – directly serving to further Big Tech profits. This probes further questions as to the formation of user identity in the digital age and opens further avenues for critical enquiry as to the implications of digitality for relational harms.

Of particular interest to the issue of digital harm is autonomy harms. Pemberton defines autonomy harms as the experience by an individual of a ‘fundamental disablement in relation to their attempts to achieve self-actualisation’ (2016:29), citing the ability to formulate and act on autonomous choices as a fundamental human need. Within our understandings of digitality, we can witness the pervasive materialisation of this form of harm. The algorithmically defined funnelling of user access to information, products, services, and environments serves as direct examples of the ways in which autonomy harms are imperative to the generation of Big Tech profits. The profit generation deriving from this would be unsuccessful if such undermining of human autonomy were not commonplace. Not only does this framework serve to acknowledge the deeper harms of digitality, but further allows for a broader perspective of the digital *system*. Considering

harms within Pemberton's framework reorientates our focus away from singular events or actions resulting in harm and toward the *processes* that continue to reproduce this. This proves highly promising for deeper consideration of digital harm and Zemiology's utility in addressing this.

However, the utilisation of the Social Harm approach is not without its issues. As recognised by both Hillyard and Tombs (2004; 2007) and Pemberton (2007), attempting to define the notion of 'harm' produces similar issues to that of defining 'crime'; harm too can be seen to possess no ontological reality, and – as highlighted by Pemberton (2007) – risks devolving into matters of moral relativism concerning the processes by which harm is defined. Thus, a coherent lens must be developed to provide the Social Harm perspective with the rigor to avoid becoming political currency. To add to this, the departure from the crime-centric gaze of Traditional Criminology further raises questions regarding where the Social Harm perspective is situated, and its object of study (Pemberton, 2007). The terminology of Social Harm denotes a sociological focus, with Pemberton (2007) highlighting that this designates the study of socially-mediated harm. This raises two key points for consideration. Firstly, as a mode of study, this indicates a departure from Critical Criminology and requires studies of Social Harm to be regarded as a sub-discipline of its own – stepping away from 'crime'-centric perspectives. Secondly, the awareness of Zemiology's sociological focus presents the potential opportunity to reorientate this focus towards other realms of study – a point which shall be explored further as this thesis progresses.

From this discussion, the utility of the Zemiological perspective in the acknowledgement of digital harm becomes apparent. In its current form, the Social Harm frameworks discussed possess the ability to speak to numerous harms identified in the digital context, demonstrating the perspective's efficacy in the acknowledgement of systemic productions of harm beyond a focus on harmful corporate or state conduct. However, this is by no means perfect in its utilisation. As 'Social Harm' denotes, Zemiology inherently takes a sociological focus in its conceptualisation of harm – with the applicability of this to the wider digital context and the specificities of harm stemming

from digitalization yet to be fully realised. As a mode of enquiry this requires further exploration to solidify, however, is promising in providing a foundation upon which a deeper analysis of the impacts of digitality can be built.

1.4 Conclusion

This chapter has worked to answer the following research question:

1. To what extent can Critical Criminology speak to the digital context?

Throughout this discussion, the utility of each perspective has been discussed. The corporate crime framework allows for the recognition of Big Tech corporations as harmful actors in the production of digital harm, whilst the state/corporate perspective situates this within a global context in which the state both facilitates and initiates the proliferation of digital harm. The Social Harm perspective possesses further utility in the acknowledgement and conceptualisation of specific forms of digital harm, enabling the psychological, relational, and autonomy harms (Pemberton, 2016) of the digital context to be realised.

However, throughout this discussion gaps in current Critical Criminological knowledge have emerged and further avenues for critical enquiry realised. The intertwined nature in which this evaluation has unfolded solidifies the issue of digital harm as one requiring an interdisciplinary approach. The utilisation of three Critical Criminological perspectives has allowed for different facets of digitality to be recognised, however, in doing so, has proven that singularly none of these frameworks appear able to fully give representation to the complex image of society described by digitality (Hassan, 2020; Negroponte, 1995). Furthermore, the discussion through different Critical Criminological lenses has highlighted key themes for further exploration. The corporate crime framework emphasises the different dynamics between the ‘traditional’ corporation and Big Tech corporations, drawing attention to developments in forms of Capitalism and mechanisms of capital accumulation. The state/corporate framework questions the shifting asymmetries in power between corporations and the state, calling for a

reconsideration of mechanisms and modes of power, and further a recognition of the changing role of the digital in enforcing this. Most notably, the Social Harm framework produces three primary themes for further exploration: **the digital, control, and autonomy**. The Digital in this way denotes a changing context in which a harm perspective can be situated, with this posing a promising opportunity to further interrogate changing notions of control and autonomy in the digital context.

This final point is the primary point of enquiry to take forward from this discussion. The opportunity and potential that an emergent framework of ‘Digital Harm’ presents forms a promising development of critical conceptualisations specific to the current digital context and would allow for a greater understanding of harm production. This expansion into a deeper understanding of the dynamics of the digital context is imperative to developing a critical conceptualisation of digital harm. In doing so, a broad gaze must be assumed to avoid focusing on a singular problematic apparatus of this system. Therefore, a theoretical understanding must be based *within* the digital context with a system focus. To strengthen this, there becomes a need to look beyond the confines of Critical Criminology and embrace areas of study that have long investigated issues stemming from the digital context.

With this foundational understanding and evaluation of key Critical Criminological perspectives established, it is now possible to explore the many avenues for further enquiry that have been presented by this discussion. The perspectives that have been discussed here provide valuable insight into the state and corporate power structures, and harm production that emanate from digitality, furthering our understanding of digital harm. **Chapter 2** will seek to take this further; this chapter has emphasised the need for an interdisciplinary approach to developing a theory of ‘Digital Harm’, and moreover the need for a deeper understanding of the digital context. In the wake of this, Chapter 2 presents a theory of the digital context which not only speaks to the key themes previously highlighted for development but additionally provides a foundational understanding of the digital context, Big Tech, and the emergent implications of this – Zuboff’s theory of SC (2015; 2019a; 2019b; 2020).

Chapter 2: Surveillance Capitalism

Chapter 1's discussion exemplified the need for a robust understanding of the digital context to develop an understanding of emergent digital harm. Whilst Critical Criminology and Zemiology demonstrated applicability within this context, the depth to which these frameworks could be utilised proved limited. Therefore, it is necessary to engage with perspectives external to Critical Criminology to gain this understanding. In seeking to explore the ramifications of digitalization for harm production, and considering the insights garnered from Marxist Critical Criminology's critiques of Capitalism, no stronger framework is put forward than that offered by Zuboff's '*The Age of Surveillance Capitalism*' (2019a). According to Zuboff, the accelerating digitalization this thesis seeks to explore is symptomatic of a new development of Capitalism; in which new modes and mechanisms of power have emerged amid a shifting Capitalist ideology and logic of accumulation – the ramifications of which are insidious for the present and future of human autonomy.

Beginning with *The Age of the Smart Machine* (1988), Zuboff's work has extensively charted the ways in which technological developments have impacted modern society and human existence – detailing the changing experiences of work (Zuboff, 1988), shifts in corporate power before the digital age (Zuboff & Maxmin, 2004), and the rise to dominance of Big Tech corporations (Zuboff, 2019a). Charting the rapid acceleration of technologization since the 1980s, corporate expansion within Silicon Valley, and the globalization of Big Tech corporations, this work interrogates the economic and ideological shifts which establish this system of Capitalism apart from prior understandings of neoliberalism. Zuboff's work has proved largely influential both in the business and economics discipline within which it is founded as well as within marketing studies (Darmody & Zwick, 2020), media communication studies (Woods, 2018), anthropology (Huberman, 2021), addiction studies (Montag & Elhai, 2023), and privacy law (Yeung, 2018a). However, despite the widespread recognition of the applicability of Zuboff's framework, there has yet to be such recognition within Critical Criminology.

Despite Zuboff's work often grappling with the same notions of corporate and state power, utilisation of her work within Critical Criminology is hard to come by – with critiques of surveillance technologies utilised for crime control (Fussey & Sandhu, 2020) being a rare exception before concerns around advancements in AI technology further warranted Critical Criminological analysis (Hayward & Maas, 2021).

Therefore, to provide a robust framework through which the harms of technologization can first be conceptualised, and to rectify the prior lack of utilisation of this within Critical Criminology, SC (Zuboff, 2015; 2019a; 2019b) is the lens through which this analysis will begin. Therefore, to establish this critical context, the research question of this chapter is as follows:

1. What are the key theoretical components of Surveillance Capitalism?

This chapter will predominantly utilise Zuboff's '*The Age of Surveillance Capitalism*' (2019a) to establish a critical understanding of the digital context, however where applicable her other works discussing SC are also used for this discussion (2015; 2019b, 2020). Overall, these works constitute the theory of SC however it is within '*The Age of Surveillance Capitalism*' (2019a) that this is detailed in full. For this reason, it is necessary to distinguish between when the work itself is cited as opposed to when discussion points are relevant to the theory of SC. The referencing throughout this section is therefore utilised to distinguish these points, with the main work itself being cited singularly throughout the majority and further supporting works utilised where necessary.

2.1 The Age of Surveillance Capitalism

‘The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it.’

(Weiser, 1991:94)

The primary aim of this research is to establish a Critical Criminological understanding of digital society through an understanding of SC (Zuboff, 2015; 2019a; 2019b). However, before this can be explored it must first be established what is being referred to by the term SC, and the already explored and established implications of this. A grounded and empirical base of knowledge is needed to establish a working understanding of SC, this shall therefore comprise the first element of this chapter. Developing from this, key theoretical developments posited by Zuboff shall be explored further – notably, the ideological deviations from prior understandings of Capitalism and the identification of new harms specific to the SC context. This chapter closes with a justification of the adoption of a framework which lies distinctly outside of Critical Criminology. Drawing comparisons to other works which explore changes in modern capitalism (Boltanski & Chiapello, 2018; Fuchs, 2019; Moulner Boutang, 2011; Varoufakis, 2023), a case is established for the greater applicability and rigor of Zuboff’s framework for this thesis.

2.1.1 Surveillance Capital and Big Tech

With the proliferation of the internet, personal technology devices, and the rapidly accelerating rate of technological advancement, ‘Big Tech’ corporations such as Google, Meta, Apple, Amazon, and Microsoft quickly grew into the globalized corporate powers with which we are familiar. These corporations are known not only for their technological products which have proliferated our lives, but also for the pioneering of a new economic logic and system of Capitalism. *The Age of Surveillance Capitalism* (Zuboff, 2019a) charts

the rise of this new form of Capitalism and power that is distinct to the digital context, deviating drastically from prior understandings of Capitalism both within Critical Criminology and wider discourse. Zuboff (2015:75) defines SC as a 'new form of information capitalism [that] aims to predict and modify human behavior as a means to produce revenue and market control'. This is done through the collection and commodification of user personal data, with this data being used to fuel predictive analytics of present and future online behaviour for user activity to be modified and funnelled toward guaranteed outcomes for corporate advertisers and surveillance capitalists (Zuboff, 2019a). Real-time access to online user activity is sold by surveillance capitalists to advertisers, with predictive analytics being utilised to enhance targeted advertising and predict user behaviour to guarantee purchase outcomes and web-traffic for advertisers (Zuboff, 2019a).

The workings of SC can be summarised in four key stages that comprise a feedback loop of constant extraction, refinement, and behaviour modification. (i) User data is extracted through the exploitation of numerous sources – from online profiles and personal devices, from both the software of online architectures and the hardware of the technological devices themselves, as well as from public digital services – with an infamous example of this being the datafication of public physical space through Google's StreetView (Zuboff, 2019a). (ii) Analysis of this data through machine learning takes place, in which data is categorised into marketable demographics concerning interests and personal characteristics that are reduced to their profitable outcomes. This reaches far beyond categorisation of age brackets and genders to become hyper-personalised to individual tastes, interests, and leanings – be these attributes that users are consciously aware of or not. (iii) The output of this analysis is predictive analytics, in which the collation of data informs predictions of present and future user activities and behaviours – Zuboff refers to this as 'prediction products' (2019a:8) as these behaviour analyses are commodified into a product to be sold to corporate advertisers in exchange for access to users' digital spaces. (iv) This is then channelled into the manipulation of digital space, information, and targeted advertisements. This is utilised to funnel user online activity toward online content which is deemed profitable for advertisers and for

the furthering of data extraction. The result of this is behavioural modification in the user, as their actions are implicitly steered toward those that are profitable for the surveillance capitalists. This is enacted in both the granting and limiting of access; be this in the form of visibility of a targeted advertisement promoting certain products or in the manipulation of search engine results to limit access to articles and information which would be less profitable for surveillance capitalists. This is a continuous cycle, as data collection never ceases from the myriad of apparatuses that proliferate everyday life. Zuboff terms this the 'apparatus of ubiquity' (2019a:292), referencing the combined ubiquity of technological software and hardware which makes surveillance inescapable within the digital context.

From this understanding, there are numerous important distinctions to be made which sets SC apart from prior understandings of Capitalism. An important such distinction lies within this newfound, and unprecedented, knowability of the modern market. In her works, Zuboff states that SC is a rogue mutation of capitalism and a stark departure from the familiar territory of neoliberalism for this very reason (2019a). The behavioural modification capabilities of SC have rendered the 'unknowable' neoliberal market now knowable; this has shifted the logic of accumulation away from the reciprocal relationship of consumer want and demand, replacing this with an asymmetrical relationship of corporate knowledge of user behaviour to market products and services deemed most profitable based on sustaining user activity. Predictive analytics have eliminated the uncertainty of the neoliberal market, through rendering the user entirely knowable through pervasive data extraction this eliminates market risks that were inherent, and arguably essential (Smith, 1999), to the successes of neoliberal capitalism. No longer is the 'free market' open to the ebbs and flows of consumer wants but is instead rigged for the constant, guaranteed expansion of surveillance profits (Zuboff, 2019a). Thus, the reciprocal relationship is replaced with the unilateral data extraction from users whilst the surveillance capitalists retain an opaque obscurity, with the exchange of this data occurring between large corporations alone without user awareness or consent.

A further distinction is the role of ubiquity in sustaining this system. The recognition of the ‘apparatus of ubiquity’ by Zuboff is a furthering of Weiser’s concept of ‘ubiquitous computing’ (1991:94) in which the presence of digital technologies goes unnoticed in the wake of their widespread proliferation. As both Weiser and Zuboff highlight, this technological transparency – the unnoticeability of digital technologies – has become deeply embedded within the digital context and furthers the normalization of technology’s presence – so much so that our experiences of the world are now done so *through* the technological apparatus (Susser, Roessler, & Nissenbaum, 2019) and our experiences of the world are technologically-mediated (Verbeek, 2011). According to Zuboff, this ubiquity serves a number of purposes: (i) the continuous and constant stream of data extraction from users, (ii) the ever-expanding variety of data that is able to be extracted (2019a:199), (iii) furthering the depth of data being extracted to encompass far more intimate details of personal lives and experiences (2019a:199), and (iv) the uninterrupted means to intervene and shape user behaviour (2019a:200). This mechanism of ubiquity is highly effective, as the network of apparatuses has rendered SC inescapable in the participation of society in the digital context.

A primary concern of this system is that data is collected in ‘the absence of dialogue and consent’ presenting an ‘intrusion into undefended private territory until resistance is encountered’ (Zuboff, 2015:78). The notion of consent within SC is ambiguous, as the presence of Terms and Conditions and Internet Cookie Policies requires users to ‘consent’ if services are to be used, however leaves little room for autonomous choice or control over how the data extracted from these activities is used. Furthermore, the loss of the reciprocal consumer-corporate relationship eliminates possibilities for such dialogues to occur, let alone gain traction enough for meaningful resistance to take place. The unprecedented nature of such technological capabilities has led to these private territories remaining undefended, as difficulties arise in attempts to defend personal liberties in the face of an obscured system of commodification. Further to this, the commodification of human identity into knowable demographics and the flattening of the human experience into marketable interests serves only to inflate surveillance profits – with little understanding, or concern, as to the implications of this for the identity

and autonomy of users. Zuboff raises fundamental concerns for the implications of this system for the present and future of human autonomy and cognition, highlighting the need for humanity's right to autonomy to be defended. The implications of such pervasive surveillance and manipulation by corporate entities are insidious, with the unprecedented knowability of users representing a fundamental asymmetry in knowledge between public and private interests.

Throughout Zuboff's work, key pillars of SC are established which define this as ideologically distinct from neoliberal Capitalism. Zuboff furthers critical understandings of modes of power through the recognition of SC's **instrumentarian power** (2019a:376-395) and the distinctions that set this apart from neoliberalism's authoritarian power. Her work also emphasises the departure from neoliberalism's individualisation toward a **new collectivist order** (2019a:431-437) which underpins and justifies the expansion of surveillance power. Lastly, the impacts of this system are articulated as an encroachment on **critical human rights** that must be acknowledged and defended to protect the foundations of human autonomy and cognition (2019a:475-492). To fully grasp the implications of SC, the following sections shall explore the three key pillars of this framework in more depth to further lay the foundations for this analysis.

2.1.2 Instrumentarian Power

Zuboff has conceptualised the extraction and utilisation of user data to serve corporate interests as instrumentarian; defining this as 'the instrumentation and instrumentalization of behavior for the purposes of modification, prediction, monetization, and control.' (2019:352). This form of power orientates itself around the engineering of behaviour; through acquiring the means of prediction, instrumentarian power is wielded through behavioural modification and serves only the continuation of data collection and corporate profit – making this instrumental only in the serving of corporate interests. Distinctions are to be drawn between the traditional neoliberal ideology and the new underpinnings of SC (2019a:396-397); these differences are

numerous and are exemplified by Zuboff in the differentiation between the neoliberal 'Big Brother' (Orwell, 2000), often cited within conceptualisations of modern surveillance, and Zuboff's adaptation of this in the form of 'Big Other' (2015; 2019a). This comparison serves two purposes; not only does this reorientate our understandings toward key developments within Capitalist ideology, but this also emphasises the need to move away from the familiar yet outdated terminologies with which surveillance is often discussed. Big Other signifies the 'ubiquitous networked institutional regime that records, modifies, and commodifies everyday experience...all with a view to establishing new pathways to monetization and profit' (Zuboff, 2015:81). The term itself brings attention to the intangible nature of this system, with the 'Other' denoting the formlessness and obscurity of SC's mechanisms of power.

Many prior understandings of the digital era have been built upon terminologies such as digital totalitarianism (Thomas, 2024) to exemplify the market dominance of surveillance capitalists and the aggressively accelerating rate of technological development. Whilst this may have been an apt assessment prior to Zuboff's work, to continue to base an understanding of digital Capitalism upon authoritarianism is to ignore unprecedented shifts in power and thus impede opportunities for both understanding and resistance (2019a:352). This conceptualisation lends itself to the pitfalls of situating knowledge within familiar territory, leading to a failure to develop with the technological acceleration behind these systems and mechanisms. Such as the need for the concept of authoritarianism was born from the failure of understandings of power to develop beyond the remits of imperialism, so too does modern knowledge and linguistics need to develop in the wake of SC's modes of power. The Orwellian figure of Big Brother may at first seem an apt analogy for the omnipotent gaze of SC, however the authoritarian power explored within Orwell's *Nineteen Eighty-Four* (2000) provides an understanding of the totalizing systems of power of the author's time – not a seemingly prophetic resemblance to the surveillance capitalists of the digital era. Contrary to that of Big Brother, Zuboff's 'Big Other' (2015) does not demand the conformity and idolisation of its subjects but instead requires only compliance engineered through mechanisms of seduction as opposed to intimidation. As Zuboff (2019a:279) writes:

‘Our conformity is irrelevant to instrumentarianism’s success. There is no need for mass submission to social norms, no loss of self to the collective induced by terror and compulsion, no offers of acceptance and belonging as a reward for bending to the group. All of that is superseded by a digital order that thrives within things and bodies, transforming volition into reinforcement and action into conditioned response.’

In this way, instrumentarian power does not serve a normalizing agenda, but is instead inclusive to the wants and needs of its subjects – there is no singular agenda that all subjects are being orientated toward as hyper-personalisation of algorithmic influence instead serves to maintain user engagement through a bespoke appeal to the individual. This itself requires further exploration, which the following section shall discuss, however, for now, from this we witness the shift from a totalizing form of power to one that serves independent interests and maintains fluidity.

This form of power is built upon what Zuboff calls **‘formal indifference’** (2015:76; 2019a:376). The power of SC is instrumentarian insofar as it is indifferent both to the underlying nuances of the human experience and to the wider implications of its social control. Instead, digital manipulation is orchestrated to ensure prolonged user engagement and continued data collection – regardless of the consequences this produces. As Zuboff summarises, SC can be seen to reduce the ‘human experience to measurable observable behavior while remaining steadfastly indifferent to the meaning of that experience’ (2019:376-377). This indifference is key both to the success of instrumentarian power and to the need to develop away from labelling this power as authoritarian. Countless historical accounts have demonstrated that authoritarian power is anything but indifferent, demanding not only the external conformity of its subjects but further the internalization of belief and adoration of the prevailing ideology. Through SC, we begin to see that surveillance capitalists demand no such thing and instead remain steadfastly indifferent to both externalized and internalized attitudes and experiences of this system, maintaining user engagement through the seduction of technological convenience and the inescapability of pervasive mechanisms of ubiquity as opposed to techniques of intimidation and fear imposed within the frameworks of authoritarianism (Eckhardt, 1991).

2.1.3 A New Collective Order

'What is being abolished is autonomous man – the inner man...the man defended by literatures of freedom and dignity. His abolition has long been overdue...Only by dispossessing him can we turn...from the inaccessible to the manipulable.'

B.F. Skinner, 1979:196

In the wake of SC's widespread and pervasive collection and commodification of private data one would typically expect mass public outcry for the loss of personal privacy and ownership of identifiable data. However, despite increasing public knowledge of the workings of SC and numerous cases disputing the safety of online platforms (Bhuiyan, 2025; Jamali, 2025), the claiming of data in this way appears unilaterally accepted. According to Zuboff, the general acceptance of SC has been achieved through numerous mechanisms; apparatuses of ubiquity make surveillance inescapable, the proliferation of social media means to reject this is to face social exclusion, the opaqueness of surveillance techniques renders resistance problematic in the wake of a lack of knowledge and understanding as to how these systems operate. However, underpinning all these mechanisms is a far broader shift in ideology which has enabled SC, and the acceptance of the surveillance economy, to become more palatable. To draw comparisons once again; whilst neoliberalism utilised an individualising ideology to provide palatability to its meritocratic fallacy (van Dijk, 2020), SC employs an alternative approach – that of a collectivist order to justify the pervasive extraction of personal data to aid societal efficiency (Zuboff, 2019a:431-432). This collectivist order is key both in the widespread acceptance of the surveillance economy and in the continued justification of invasive corporate surveillance. Such justifications posit that the use of personal data and impediments of data privacy are done so for the greater good of technological convenience and efficiency (Zuboff, 2019a:432-435), marketing corporate surveillance as a force for good in the improvement of online products and services.

According to Zuboff, this detached form of power and its focus on societal efficiency finds its roots in the radical behaviourist school of social psychology; taking inspiration from the works of B.F. Skinner, whose development of conditioning models, and advocacy for the replacement of social democracy with social certainty (Skinner, 1979; Zuboff, 2019a:432), paved the way for the systems of reinforcement seen within the surveillance economy. The addictive architectures of SC mirror the conditioning systems utilised within Skinner's works (see Skinner, 1957; 1963), and further utilise the ideological justifications behind his later writings (Skinner, 1979; Zuboff, 2019a). These works are formative in the development and justifications of digital systems of control; as instrumentarian power utilises social conditioning and reinforcement to modify user behaviour with this being justified under the collectivist order (Zuboff, 2019a:438-443). However, further to this, it is within radical behaviourism, and specifically within the works of Skinner, that we can first witness the ideological and epistemological justifications for such a view of human behaviour. The radical behaviourist approach advocates for the development of a **'technology of behaviour'** (Zuboff, 2019a:353), in which the objective analysis of human behaviour aims to eliminate societal uncertainty, replacing this with total certainty of human actions and enabling a society of rational efficiency through the eradication of democratic processes deemed slow and inefficient. The underlying emphasis of this ideology is one of development, in which the elimination of uncertainty allows for a streamlining of societal development – as Skinner states in his controversial *Beyond Freedom and Dignity* (1979:172): 'The intentional design of a culture and the control of human behaviour it implies are essential if the human species is to continue to develop'. This denotes the emphasis on linear development often seen within surveillance capitalist's discourses, as criticisms of technological developments are denounced as failures to adapt to technological advancement whilst pervasive surveillance is marketed as imperative to societal development. This raises fundamental questions regarding the basis behind the 'greater good' approach, raising alarm concerning how development and societal efficiency is defined and who it is that gets to define this. As Zuboff (2019a:432) highlights:

'How is the greater good determined when surveillance capitalism owns the machines and the means of behavioural modification? "Goodness" arrived already oriented

toward the interests of the owners of the means of behavioural modification. And the clients whose guaranteed outcomes they seek to achieve. The greater good is someone's, but it may not be ours.'

The ability of surveillance capitalists to orchestrate the collectivist order allows this to be utilised to further specific aims under the guise of a 'greater good' established to cater for corporate interests. This raises concerns for the present and future of human autonomy within the digital era, as the ability to operate outside of this system is diminishing whilst opportunities for autonomous user action are further being eradicated through the justification, rationalisation, and acceptance of loss of freedoms.

2.1.4 Critical Human Rights

The implications of this system for the present and future of human existence are insidious; the controlling and limiting of access to information, knowledge, and opportunities for discussion are highlighted by Zuboff as direct impediments to the preservation of democracy (2019a:21, 512-513, 516-519). The seeming disregard for systems of democracy by surveillance capitalists is further indicative of the ideological emphasis on the collective and the asymmetrical 'power to' which corporations hold within the digital context. As Zuboff states: 'Power, politics, and law do not enter into the equation, presumably because they are already obsolete in the social vision under construction here' (2019a:443) – such a social vision views the systems of democracy as impediments to the expansion of surveillance profits, with corporate conduct achieving greater efficacy in the invisible bypassing and undermining of democratic structures (Zuboff, 2022). The ability to disregard such systems speaks to the economic leverage wielded by surveillance capitalists, as such an ability lies outside of the capabilities of individuals themselves but can retain traction at the level of the corporation. However, the implications of the SC system do not only lie at the macro, population level but delve deeper into the everyday micro level of the individual living in the digital context. SC can be seen to be actively undermining numerous, long-established basic human rights whilst additionally representing a threat to human autonomy as Zuboff calls for the

acknowledgement and protection of further critical human rights. The pressing need to protect the rights of consumers in the age of SC calls for the reorientation of economic priorities, and further a reassessment of what form such protection can and should take. This section shall explore the current implications of this system for human rights and the critical human rights advocated for by Zuboff.

The Universal Declaration of Human Rights (UDHR) (United Nations, 1948) established an international doctrine of basic rights to be protected; the right to self-determination (Article 1), the right to be free from discrimination (Article 7), the right to privacy (Article 12), the right to freedom of expression (Article 19), and the right to one's own personality (Article 22) can all be seen to be routinely undermined by the system Zuboff presents. The capacity for behavioural modification undermines the right to self-determination, freedom of expression, and one's own personality, predictive analytics undermine the right to be free from discrimination, whilst invasive corporate surveillance undermines the right to privacy. Within the discussed operations of SC the undermining of these human rights is blatant, however little recognition is given to the ways in which the operations of SC impede the upholding of such a long-standing human rights framework. Zuboff expands the human rights framework through the proposal of further critical human rights to be defended: **the right to the future tense** (2019a:328) and **the right to sanctuary** (2019a:475). These rights speak to the need to protect humanity's internal dialogues from commodification and further protect the capacity to seek refuge from the surveillance gaze. Whilst these rights are not necessarily posited as suggested additions to the human rights framework by Zuboff, they form clear avenues for an expansion of what constitutes a basic human right in the digital context and the potential for this to be developed to incorporate internalized needs.

The right to the future tense seeks to protect humanity's right to individual will; the protection of an imagination of a future, the will to pursue this imagined reality, and the ability to do as one intends in the achievement of this (2019a:20, 54, 328-347). In this way, Zuboff's conceptualisation of the future tense pertains to the individual ability to act autonomously and without obstruction or interference to determine future realities. The

future tense, due to the ebbs and flows of human imagination and will, remains uncertain – open to changing motivations and emotions that form the internalized dialogue of autonomy. To this end, Zuboff cites the predictive capabilities and behavioural modification of SC's 'panvasive digital architecture' (2019a:331) as a threat to the ability to form the future tense, obstructing and interfering in the formation and execution of this will. The eradication of the ability to form the future tense has insidious implications, as Zuboff states: 'In the absence of this freedom, the future collapses into an infinite present of mere behaviour, in which there can be no subjects and no projects: only *objects*.' (2019a:336, emphasis in original). What is exemplified here is the presiding objectification of the human experience in the wake of this right's encroachment; the dissection of behaviour away from autonomy and internal emotional experience, and a furthering of the behaviourist viewpoint of humanity as organisms to be observed. To acknowledge and defend this right is to first recognise the obstructive capabilities of SC and the mechanisms by which this system interferes in the very conceiving of autonomous action, to recognise that, by operating as design intended, such digital architectures inherently undermine this vital aspect of human autonomy.

The right to sanctuary advocates for the right to refuge from the surveillance gaze, surpassing the threshold of the need for privacy to instead recognise the diminishing opportunities for internal contemplation without the obstruction or observation of corporate surveillance (2019a:21, 54, 475-492). To conceptualise this right, Zuboff lends from the work of Gaston Bachelard and topoanalysis – 'the study of how our deepest relationships to inner self and outer world are formed in our experience of space' (2019a:476) – within '*Poetics of Space*' (2014) to exemplify the loss of personal and private space. Within this, the ability to occupy private space is seen an imperative to the formation of the self – with privacy and aloneness required for the dialogues of identity formation to take place. Through this conceptualisation, Zuboff emphasises not only the software implications discussed previously but further the expansion of digital hardware into the private space – exemplified in the form of 'smart' homeware (2019a:5-7, 267-268, 237-238, 260-261, 268), leaving no private realm within which refuge can be sought. The function of such hardware serves pervasive datafication, furthering surveillance

capabilities by facilitating their expansion into the domestic space and cataloguing behaviours within the private space. The crossing of this threshold denotes a changing in the boundaries of spaces of control and exemplifies the diminishing opportunities for refuge. The lack of refuge is further embodied within the ideological rhetoric of SC – phrases such as ‘what have you got to hide?’ are ubiquitous within justifications of the surveillance gaze (Zuboff, 2019a:479). However, the lack of a need for privacy can only truly be justified once there is no longer the need for internal contemplation and solitary dialogue, presumably because the need for this is obsolete through pervasive commodification – or as Zuboff put it: *‘If you’ve got nothing to hide, you are nothing.’* (2019a:479, emphasis in original).

2.2 Why Surveillance Capitalism?

As the entry point to this analysis, the choice to look outside of Critical Criminology and utilise a framework of Capitalism and the digital context so firmly rooted within the arenas of business, economics, and technology may seem odd – if not an undermining misstep. Whilst Zuboff’s work has widespread implications for a range of disciplines, it is clear throughout that the fundamental theoretical underpinnings of this writing stems from a business outlook. However, as the primary aim of this research is to investigate and reconceptualise notions of harm within the digital context, the decision to begin this from outside of the thresholds of Critical Criminology requires an inherently multi-disciplinary foundation. Despite this, and due to potential criticism for this theoretical underpinning, a justification for this choice must be established to fortify both this decision and its applicability to issues within Critical Criminology.

Primarily, Zuboff’s work remains among the most developed frameworks of technological advancement and the emergence of pervasive corporate surveillance. However, prior frameworks exist that provide theoretical developments in line with Zuboff’s contributions. Fuchs (2015) dubs this system *‘Digital Capitalism’* and approaches this from a Marxist standpoint, drawing similar conclusions as to the role of power within the

functioning of this system. Moulner Boutang (2011) similarly proclaims the end of neoliberalism within '*Cognitive Capitalism*' and echoes many of the same sentiments as Zuboff in the shift to an attention-based economy and the dawn of a new economic system that deviates from prior understandings. Boltanski and Chiapello (2018) equally recontextualise the modern society within '*The New Spirit of Capitalism*', drawing similar conclusions to Zuboff as to the changing ideology of modern capitalism and the role of the corporation. Srnicek's '*Platform Capitalism*' (2016) presents a further similar framework to Zuboff, albeit it through situating online platforms at the centre of the analysis. More recently Varoufakis (2023) explored the changing economic system in the wake of cloud capital, conceptualising the big tech corporation-centric model '*Technofeudalism*'. However, despite valuable contributions being prevalent throughout these works and their theoretical underpinnings, at times, being closer to sociology than Zuboff's, these works lack the extensive framework that is offered by Zuboff's '*The Age of Surveillance Capitalism*' (2019a). Despite this, what unifies these perspectives is the centrality of digital surveillance and data commodification in the production of capital.

The working model of this system and its mechanisms provided by Zuboff allows for a greater conceptualisation that takes this beyond the remit of a theoretical exploration and allows for grounded applications to take place. Not only are these applications explored throughout her work (see 2019a:140-154, 267-268, 234-235, 305-306, 308-318), but in utilising this for further case studies since the publication of the work it allows for a wider consideration as to the true efficacy of the SC model and for applied criticisms. Therefore, in utilising a theoretical perspective from outside of the remits of Critical Criminology this operates as a strength as such a working model can begin to be laced with prior Critical Criminological understandings and vice versa. Applications and utilisations of this model have already surpassed the boundaries of the business and economics discipline within which it was founded and has allowed for developments within Surveillance Studies (Cinnamon, 2017; Lehtiniemi, 2017), Education (Stockman & Nottingham, 2022), Anthropology (Huberman, 2020), and Addiction Studies (Montag & Elhai, 2023). Not only does this wider appreciation for Zuboff's work provide a justification for its use here, but further advocates for this to reach the territory of Critical

Criminology and its ability to speak to a digitally-informed understanding of corporate harm.

However, Zuboff's work has arrived somewhat late in the historical timeline of Big Tech dominance and is preceded by many contributions within the field of Surveillance Studies. As highlighted by Ball (2019) and shall be discussed in more depth in Chapter 3, the concerns outlined within its pages have long been voiced within the field of Surveillance Studies and have been a recognised arena of study for two decades prior to '*The Age of Surveillance Capitalism*' being published. Despite this prior work and the clear links to Surveillance Studies, there is little reference to this literature within SC. However, as Ball (2019) goes on to acknowledge, the intended audience of Zuboff's work are not those already researching this shift in power but are those within the fields of business and economics where there has yet to be such scrutiny applied. In this way, SC can further provide an entry-point into understandings of a digitally-informed Capitalism that is similarly lacking within Critical Criminology.

Chapter 3: Zuboffian Assumptions

Thus far, this discussion has outlined the workings of Zuboff's model of SC, discussed the proposed developments in Capitalist ideology, and further highlighted the implications of this for understandings of power. However, within this thesis, Zuboff's work has yet to be met with much scrutiny. Within *The Age of Surveillance Capitalism* (2019a) there are numerous assumptions and omissions made that shall be disseminated further in this chapter. Of concern for many critics of SC is the lack of works from within Surveillance Studies underpinning Zuboff's framework. Despite 'surveillance' being in the name, prominent works from within the field fail to make an appearance; a seeming oversight by Zuboff herself. The conceptualisation of SC is left vulnerable to criticisms of technological determinism, in which digital technologies possess unprecedented causative agency to overpower user agency. Further to this, the Marxist potential within the work is also left unrealised. Despite clear overlaps with Marxist theory in developing modes of production, extraction and exploitation, Marx makes only three appearances within the work (2019a:99, 221, 406) with this predominantly being for comparative purposes, to refer to industrialist capitalism, and to seemingly distance SC from a Marxist perspective. Through this, SC is conceptualised as a novel and *new* form of Capitalism; a claim that is arguably overstated within the work. The epistemological and ontological implications of SC are further left undeveloped and unaddressed within the work, with SC making vast claims regarding the human experience of, and existence in, the digital context. Lastly, resistance remains an underdeveloped issue within SC – whilst discussed throughout using numerous case studies of user action (2019a:128-139, 142-143, 343-344, 489-492, 486), an explicit discussion of what SC means for resistance efforts is left unexplored.

The research questions of this chapter are as follows:

- 1. What are the limitations of Zuboff's Surveillance Capitalism?**
- 2. How, if at all, can these limitations be overcome?**

In seeking to develop a critical understanding of SC, these oversights must be addressed and, if possible, ameliorated through this work. This chapter shall therefore aim to address these issues in the following order: (i) addressing the absence of Surveillance Studies within SC, (ii) technological determinism within SC, (iii) exploring Marxist approaches to SC and Big Data Capitalism, (iv) tackling the issue of novelty within SC, (v) understanding the epistemological implications of the work, (vi) the ontological implications, and finally (vii) the issues surrounding resistance that remain underdeveloped within SC.

3.1 The Curious Absence of Surveillance Studies

The key focus of Surveillance Studies is investigating and seeking to understand ‘the rapidly increasing ways in which personal details are collected, stored, transmitted, checked, and used as means of influencing and managing people and populations’ (Lyon, 2002:1). Surveillance Studies as a field is inherently interdisciplinary, including sociology, computer technology studies, anthropology, socio-legal, and criminology – among many more (Lyon, 2007). Whilst the definition and interdisciplinary approach of Surveillance Studies is mirrored in Zuboff’s work, and despite ‘surveillance’ being in its very name, works within Surveillance Studies make alarmingly brief appearances within *‘The Age of Surveillance Capitalism’* (2019a) – with these appearances consisting of Professor David Lyon’s work being mentioned twice (2019a:112, 115) and a brief utilisation of Foucault’s panoptic metaphor (2019a:470-471) – the issues with which shall be explored in the following section. This represents an oversight of the value of Surveillance Studies, as it is within Surveillance Studies that we first see an acknowledgement and consolidation of SC knowledge.

This section aims to outline the key contributions that can be garnered from the vast works within Surveillance Studies that have sought to comprehend the impacts of Big Tech’s development – with many of this works predating the framework offered by Zuboff (2019a). Firstly, the concept of spaces of control shall be interrogated by drawing upon

works established around Panopticism (Foucault, 2020) and the continued adaptation of this framework to explore modern surveillance. Secondly, notions of selfhood and identity within the digital context shall be explored, approaching the interactionism inherent between the physical self and the digital space.

3.1.1 Post-Panopticism and the Spatialization of Control

‘The perfect disciplinary apparatus would make it possible for a single gaze to see everything constantly’

Foucault, *Discipline and Punish* (2020a:173)

Few concepts within discussions of surveillance are as ubiquitous as Foucault’s Panopticism (2020a). Drawing upon Bentham’s Panopticon (2020), Foucault conceptualised the individual’s internalization of discipline through architectural mechanisms and the modification of behaviour through surveillance. But despite developments being made in both modern modes of surveillance and in our understandings of these, and despite Foucault’s own recognition of the need to develop understandings beyond the disciplinary context within which this analysis is set (Deleuze, 1992), reliance on the panoptic metaphor persists. Attempts to recontextualise this framework for the digital age has given us various derivatives; from the superpanopticon (Poster, 1990; 1996), panopticommodity (Lyon, 2007), the participatory panopticon (Whitaker, 1999), the ‘refracted or prismatic’ panopticon (Humphreys, 2006:304), and the inverse in the form of the synopticon (Mathiesen, 1997). With its architecture and mechanisms ‘prone to iconic simplification’ (Simon, 2005:3), it comes as no surprise that the legacy of Panopticism persists within our considerations of digital surveillance. However, whilst this remains a tempting framework through which to continue to develop our understandings, Galič et al. (2017) aptly surmise that the concept of the Panopticon ‘should not be over-stretched beyond recognition when trying to capture the new and different forms of surveillance today; rather, a new set of analytical tools is required’ (2017:20). After all, as Murakami Wood (2007) highlights, it is

unlikely that Foucault himself would have referred to current structures of power as 'superpanoptic' or as lying within prior articulations, and would instead have treated current mechanisms of surveillance as particular technologies of power that are of their own temporal and spatial significance, indicative of their own dynamics of power/knowledge (2007:253) and thus requiring a unique approach that is embedded in the digital context.

Surveillance Studies calls for numerous developments; primarily in recognising Panopticism as a historically bound concept, rendering it questionable for understandings of surveillance and power nearly two centuries after the conception of the Panopticon to still be based upon this when producing knowledge of new sociotechnological developments (Murakami Wood, 2007). Perhaps due to this, where many conceptualisations of digital surveillance seem to fall short is in understandings of the spatialization of power and control, with many of the recontextualizations maintaining a fixed environment within which surveillance takes place as opposed to recognising the boundarilessness with which control is exerted due to digital technology's ubiquity (Zuboff, 2019a). Our understandings of power must be broadened away from investigating the effect of power on a space and instead must focus on the **spatialization of power** (Koskela, 2000), the mechanisms through which the use of space for control have become diffuse – no longer architecturally or spatially bound, as our understandings of discipline are based on, but is instead able to be exerted through ubiquitous mechanisms, continuously, infinitely, simultaneously, and uninterrupted. The shift from discipline to control is distinctly non-carceral and non-coercive (Shearing & Stenning, 1985), as users are not forced into obedience but are seduced into compliance in spaces within which control is subtle and embedded within the digital architecture. In contrast to our understandings of Panopticism and discipline within which individuals are forced and directed, this technologically embedded control is instead 'social organisation without spatial divisions and explicit prohibitions' (Brusseau, 2020:2) allowing for the proliferation of surveillance with technological convenience and consumption as the seducing factors.

Technologization has signified an unprecedented shift in modes of power and thus exemplifies the era of control (Deleuze, 1992). Through digital technologies, surveillance has become 'de-territorialised' (Galič et al., 2017:23); operating as a heterogeneous network of elements and spreading rhizomatically (Deleuze & Guattari, 2013; Murakami Wood, 2007; Murakami Wood & Ball, 2013). This is a distinctly instrumental corporate power (Shearing & Stenning, 1985), as control is wielded diffusely and implicitly as opposed to the blatant moral absolutism of authoritarian Panoptic discipline. Social control therefore is decentralised and shapeshifting, ever fluid between spaces and contexts, information and analyses, as opposed to the spatially situated discipline explored by Foucault (2020a). From here, a distinction forms in that discipline operates through 'discrete and separate spaces', thus meaning that physical thresholds impose behavioural shifts, whereas control operates within 'geometric and continuous lines', it is numerical and summative (Brusseau, 2020:11), ever-present and all-encompassing. In this way, discipline is normative, whilst control is inclusive. A further central distinction to be made is in the longevity of discipline versus control, as Deleuze (1992) highlights, discipline is of a 'long duration, infinite and discontinuous' whilst control is 'short-term and of rapid rates of turnover, but also continuous and without limit' (1992:6). Within the digital context, it is no one omnipotent entity for whom the user's autonomy is being manipulated to serve the interests of, nor is it through a singular device, rather there is a constant turnover of control through networks of surveillance as short-term corporate interests are met and the feedback loop of data collection continues.

The surveillant assemblage (Haggerty & Ericson, 2000) represents this accumulative network of mechanisms, apparatuses, institutions, and corporations that have come to form what is now being explored through SC. Not only does this concept allow for the recognition of the wider network of surveillance mechanisms, but also exemplifies the underlying notion that there is no authoritarian united front, instead recognising the ubiquity of surveillance from all sides, and the widespread normalization of surveillance mechanisms across industries and sectors. Due to this, Haggerty and Ericson (2000) warn against speaking of *the* surveillant assemblage, as this risks fostering the notion that discussions are concerned with a fixed and stable entity or with a singular apparatus.

As the surveillant assemblage is comprised of numerous mechanisms and modes, and lacks ‘discernible boundaries’ (2000:609), this cannot be dismantled through the restriction or regulation of a particular technology, nor can this be comprehended through the criticism of a specific corporation or institution. To do so would be to enforce ‘a frantic focus on a particular unpalatable technology or practice whilst the general tide of surveillance washes over us all’ (2000: 609).

Whilst it cannot be denied that digital surveillance exhibits panoptic qualities in certain settings (Lyon, 1993), the distinctions outlined above form a clear argument for the need to move our understandings of digital surveillance beyond the confines of the Panopticon and to recognise the modes of power that exert control in the digital context. Through the proliferation and ubiquity of smart devices, control is inescapable and the more deeply surveillance becomes entrenched within everyday life, the more so that the need for disciplinary mechanisms to enforce behavioural modification becomes defunct – or as Brusseau (2020:3) more succinctly states: ‘as the data increases, concrete walls become redundant’. To understand how this spatialization of power and control aids in the production of harm, we must first abandon our focus on spaces of control and reorientate toward the society of control (Deleuze, 1992) before we can begin to investigate the implications of this for the human experience.

3.1.2 The Digital Self and Identity Commodification

Central to discussions within Surveillance Studies are concerns for the impact of digital surveillance on the internal facets of human existence. The interactionism between the corporeal self and digital mechanisms of surveillance, and the implications of this, require exploration to integrate this into understandings of Digital Harm. Primarily, it is through the surveillant assemblage that human bodies are abstracted, dissected, and reassembled for surveillant analysis – with these reassembled, fractured selves no longer reflecting the human being that was once behind them but instead reducing the human existence to marketable demographics of attributes and interests (Brusseau, 2020;

Hammond, 2016). This forms a commodification of the self; a commodification which becomes internalised through constant reinforcement, and a mechanism of control which has drastic implications for human identity and autonomy. Perpetuating this, consumers are seduced into becoming complicit in their own commodification, becoming engaged in 'the provision of data as a normal part of consumption practice, through loyalty schemes, social networking sites, location-based technology use and search engines to perform work in their own surveillance' (Murakami Wood & Ball, 2013:51), being further 'seduced to conform by the pleasures of consuming goods that corporate power has to offer' (Shearing & Stenning, 1985:304), and more recently by the pleasures offered by technological convenience. The social media profile becomes the new dossier of subject information (Humphreys, 2006), with the unique attribute that it is the subject themselves compiling the information for analysis, comprising an intimate form of invasive exploitation and improving the accuracy of predictive capabilities through utilising the insight gained from one's own subjectification. This intimacy of invasion crosses new thresholds through digitalization, as bodies and identities become increasingly scattered across the digital realm – allowing for deeper levels of knowability to be achieved with little opportunity for protection from analysis.

In the digital context, the body is not approached by surveillance in its initial physical form, but first must be broken down into the knowable, into 'a series of discrete signifying flows' of data (Haggerty & Ericson, 2000:612). This is indicative of the increasing 'fragmentation of the human body' (Haggerty & Ericson, 2000:613), through which the body and identity are transformed into pure information for analysis. This digital self can more readily be assembled and reassembled to aid algorithmic analysis and marketability, forming the coalescence of a new type of body – that which 'transcends human corporeality and reduces flesh to pure information' (Haggerty & Ericson, 2000:613). This signifies 'the multiplication of the individual, the constitution of an additional self' (Poster, 1990:97) as these bodies are increasingly the objects toward which governmental and marketing practices are directed (Turow, 1997).

The observed body within the digital context is of a hybrid composition – simultaneously corporeal and digital in its being, abstracted from its territorial setting and reassembled in differing digital settings through varying data flows (Haggerty & Ericson, 2000). In this way, the monitored body is increasingly a cyborg (Haraway, 1991), comprised of the physical self and the digital self – with the lines between these seemingly separate selves becoming increasingly blurred as the realms of the physical and the digital interlace. Belk (2014) approaches these digital doubles as a form of an extended self, stating that ‘the ultimate legacy of the expanding digital universe for our sense of self is one of disembodiment, re-embodiment and hybridity’ (Belk, 2014:1101). The disembodied digital self is to be effectively present when our bodies are not (Belk, 2013; 2014), able to occupy environments which would otherwise be unavailable to us, with the implications of this for control being vast in the wake of a digital body occupying an infinitely manipulatable corporatized digital space. Whilst Zuboff (2019a) highlights our ability to simply turn off our devices and escape this control, albeit it briefly due to society’s increasing technological reliance, Surveillance Studies emphasises the diminishing capacity to do so. Our digital doubles are increasingly becoming a key faction of our identities, with digital devices ‘becoming increasingly invisible and taken as a ‘natural’ part of self’ (Belk, 2014:1110) making it difficult to imagine life without our digital counterpart and the apparatus they require. Furthermore, the prior discussion of the spatialization of control further underlines that this form of control is inescapable, as the mechanisms of the surveillant assemblage are omnipresent and ubiquitous – far surpassing the boundaries of simply singular devices to the point that ‘individuals who are intent on staying anonymous should not use credit, work, vote, or use the Internet’ (Haggerty & Ericson, 2000:620).

Degrees of anonymity and privacy are fundamental to the continuing development of human identity, providing new opportunities and possibilities in self-creation (Haggerty & Ericson, 2000:619) within contexts that allow for the natural transience and discontinuity of identity attributes, interests, and relationships. However, the knowability of users through this system is a direct threat to the ability to shift and change throughout our lives, with the normalization of constant surveillance and identity consolidation

(Brusseau, 2020) allowing for intimate moments to be captured for data analysis. Yet this invasion of privacy is often met with user apathy (Hinds, Williams, & Joinson, 2020), as Haggerty and Ericson summarise: 'Privacy is now less a line in the sand beyond which transgression is not permitted, than a shifting space of negotiation where privacy is traded for products, better services or special deals' (2000:616). This constant negotiation negates user ability to comprehend the widespread loss of freedoms that are traded for technological convenience, as the constant need to consent to internet cookies, terms and conditions policies, community guidelines, and user agreement policies minimises surveillance mechanisms to individualised events and spaces. The fracturing of the self through the digital creates new barriers to the maintaining of user privacy, whilst simultaneously creating new frontiers of knowability and corporate occupation of internalized spaces, surpassing the boundaries of the corporeal.

3.2 Technological Determinism

By constructing an understanding of digital technologies as possessing unprecedented powers of persuasion and manipulation, SC is vulnerable to criticisms of technological determinism and reductionism. Within understandings of digitalization, there typically emerges two schools of thought: techno-utopianism (Dickel & Schrape, 2017; Gendron, 1977), such as Pentland (2014), and techno-dystopianism, such as Zuboff. The dystopian stance taken by Zuboff throughout the work is merited by the supporting evidence she gathers; however, the techno-dystopian undercurrent is also prevalent in her previous work (Zuboff, 1988) thus raising questions as to whether this approach is inductive from the empirical work being undertaken or deductive from a preconceived techno-critical stance. Determining this is beyond the scope of this thesis, however in seeking to address criticisms of technological determinism within the work, it is important to note this prevalence and how this manifests within the work's deterministic potential pitfalls.

In presenting SC as she does, Zuboff conveys the inevitability of SC and offers a worldview in which the overpowering agency of digital technologies leaves little action

available to users to prevent or resist commodification – a point to be returned to in the final section of this chapter (see page 71). Early in SC, Zuboff states the following:

*‘The entangled dilemmas of knowledge, authority and power are no longer confined to workplaces as they were in the 1980s. Now their roots run deep through the necessities of daily life, **mediating nearly every form of social participation.**’*

(2019a:4, emphasis added).

This raises a key area for future exploration within this research: **technological-mediation**. The inference made here is of human life as entirely technologically-mediated, with this providing a fundamental aspect of SC’s functioning and ubiquity. It is through the ubiquity of technology that life has become technologically-mediated, providing the mechanisms through which pervasive surveillance and data extraction occur. Therefore, by conceptualising SC in this way it seems impossible to avoid a deterministic understanding of technology’s functioning without delving deeper into developing an understanding of how users interact with and understand technologies, as well as investigating user viewpoints of their relationships to technologies. User perspectives of technologies are absent within SC, with the data supporting the development of the framework stemming from interviews with executives of Big Tech corporations and academic accounts. To address technological determinism, especially when wanting to understand technological-mediation more, it is imperative that a deeper understanding of **human-technology relations** is developed.

3.3 Neo-Marxism in the Digital Era

In the introduction of *The Age of Surveillance Capitalism*, Zuboff states: ‘the unprecedented nature of surveillance capitalism... cannot be adequately grasped by our existing concepts’ (Zuboff, 2019a:14). The framework she goes on to outline supports this statement to a certain degree, however, numerous existing concepts are drawn upon to

support this framework. Among these existing concepts is Marxist theory. Throughout *The Age of Surveillance Capitalism*, Marx's work makes only three appearances – all instances serving to distance SC from Marx's understandings of industrial capitalism (2019a: 99, 221, 406) – however, this is significant in the theoretical underpinnings of SC. Despite discussing developed modes of production, extraction, and exploitation, Zuboff makes no claim to situate SC within Marxism yet the applicability of Marxist analysis to SC remains pertinent. Marxist theory remains a prominent framework through which to understand developments in capitalism through Big Data (Feenberg, 2017; Fuchs, 2011; 2013; 2019; Jin & Feenberg, 2015; Mueller, 2021; Srnicek, 2017), many of which arrive at similar conclusions to Zuboff regarding the imperatives of data analysis to capital accumulation and the centrality of digital technologies to the functioning of digital Capitalism. However, neo-Marxist perspectives offer further insights into SC that are not captured by the work itself – whilst discussions of Big Tech's surveillance practices are deeply explored by Zuboff, there is a lack of attention given to the *Capitalism* element of this. Or as Kienscherf (2022:18) states, SC 'is much stronger on surveillance than on capitalism'.

Outlining the system of SC Zuboff states that “Data” are the *raw material* necessary for surveillance capitalism's novel manufacturing processes.’ (2019a:65, emphasis added), expanding that ‘Users provided the raw material in the form of behavioral data, and those data were harvested to improve speed, accuracy, and relevance’ (2019a:69). Through this system, ‘our lives are unilaterally rendered as data, *expropriated*, and repurposed in new forms of social control’ (2019a:54-55, emphasis added). Whilst SC may have normalized the mass expropriation of personal data, in this expropriation SC is not unique as processes of expropriation have long been a key facet of capital accumulation. Primitive accumulation (Marx, 1976) relied on the expropriation of resources, solidifying expropriation as a process foundational to capital accumulation. The view of data as raw material conveyed by Zuboff determines that the expropriation of this is akin to primitive accumulation, creating an understanding of this raw material as something that is naturally occurring and pre-existing as opposed to something that is *produced* by users. As Sadowski (2019: 2) states: ‘Data is not just out there waiting to be discovered as if it

already existed in the world...Data is a recorded abstraction of the world created and valorised by people using technology. The framing of data as a natural resource that is everywhere and free for the taking *reinforces regimes of data accumulation*'. (emphasis added).

Seeking to avoid this reinforcement, and negating the discursive framing used by surveillance capitalists themselves to justify data accumulation, we can shift our understanding of personal data towards a position in which this is produced and not naturally occurring. Users produce behavioural data in the online sphere, through photos, videos, search queries, online shopping, time spent on platforms, etc. Through a Marxist lens, this production is further reframed as a form of digital labour (Fuchs, 2011; 2013; 2019) as user relations with surveillance capitalists becomes increasing contractual amid user agreements, community guidelines, and terms of service (Kienscherf, 2022). Through these agreements, users consent to the expropriation of their data – albeit it ‘under coercive conditions’ (Kienscherf, 2022:23), as not doing so may result in diminished opportunities and/or exclusion. However, this cannot be claimed to be informed consent, as opaque terms of service agreements amid digital architectures designed to inconvenience the user who chooses to read the document furthers the coercive conditions under which consent is granted.

Fuchs (2011; 2013; 2017; 2019) therefore argues that users should be compensated for the digital labour involved in surveillance capital accumulation. As if written in response to Fuchs, Zuboff states:

‘It is obscene to suppose that this harm can be reduced to the obvious fact that users receive no fee for the raw material they supply. That critique is a feat of misdirection that would use a pricing mechanism to institutionalize and therefore legitimate the extraction of human behavior for manufacturing and sale. It ignores the key point that the essence of the exploitation here is the rendering of our lives as behavioral data for the sake of others’ improved control of us.’

(2019a:94)

To monetize digital labour would therefore be to reinforce surveillance capital accumulation further, legitimising this in the eyes of surveillance capitalists and further diminishing any opportunities for resistance users may have. Whilst Fuchs by no means speaks for all those who utilise Marx to understand digitalization and data commodification, to advocate for monetary compensation or the formalisation of digital labour negates the impediments to autonomy this presents. In imagining alternatives and forms of resistance, paid digital labour comprises a submitting to, not a resistance of, data commodification and SC.

What this section has illustrated, through engaging with only some of the Marxist understandings of Capitalism in the digital context, is that SC can be formatively developed through aligning this with Marxist theory. This has sought to strengthen the conceptualisation of SC as *a form of Capitalism*, providing further insights as to the role of expropriation and labour in the production of surveillance capital, and reconfiguring our understandings of data and the user within this. However, this has also served to disprove Zuboff's claim at the beginning of this section; we can adequately grasp SC through an aligning with existing concepts. Whilst the ideological underpinnings of SC she outlines (see page 40-45) may have no historical precedent, Capitalism itself certainly does – and recognising this only serves to strengthen analysis of and resistance to SC.

3.4 Is Surveillance Capitalism really *new*?

Throughout *The Age of Surveillance Capitalism*, Zuboff makes distinctions between SC and neoliberal capitalism; outlining a new collectivist order (see page 43) and instrumentarian form of power (see page 40) which both seek to distinguish SC from the familiar terrain of neoliberal Capitalism. Whilst 'neoliberal ideology and policy also provided the habitat in which surveillance capitalism could flourish' (2019a:54), according to Zuboff, SC has since changed the landscape of capitalism beyond the framing of neoliberalism. However, whilst Zuboff describes SC as 'a new form of

capitalism' (2019a:62, 63) and goes on to state that 'Surveillance capitalism is not the old capitalism' (2019a:498), this novelty and newness is arguably overstated. By charting the ways in which Zuboff advocates for the novelty of SC, we can begin to more firmly situate SC within its historical and current context of neoliberal Capitalism – in which modes of extraction comprise its novelty, whilst neoliberalism comprises the surrounding context.

Firstly, the new economic order of SC 'claims human experience as raw material for hidden commercial practices of extraction, prediction, and sales' (Zuboff, 2019a:v). Reiterating the discussion within Chapter 2 (see pages 36-48), SC disrupts the consumer-corporation relationship, instead operating within a 'knowable' market rigged for constant expansion. However, within critical studies of neoliberal Capitalism the concept of the 'unknowable' neoliberal market has already been disputed. Studies within crimes of the powerful (Friedrichs, 2015; Pearce, 1976) and corporate crime (Box, 1983) have long emphasised practices of monopolisation, insider trading, and regime shopping (Tombs & Whyte, 2020) that have also rigged neoliberal Capitalism for the constant expansion of corporate power and profit. With attention being drawn to transnational corporations (Box, 1983) and the global economic power wielded by them, the distinction between SC and neoliberal Capitalism on the grounds of un/knowable markets loses traction. The neoliberal climate has already been seen to be rigged for the expansion of the ever-diminishing number of dominant corporations as their economic power becomes intensified (Box, 1983).

As has been discussed in the previous section, surveillance and expropriation have long played a central role in capital accumulation; so, whilst SC has seen the normalization of mass surveillance and expropriation of personal information, these are not mechanisms that are novel to SC alone. Further returning to Marxist critiques, the imperative of capital accumulation is the driving force that enabled data collection and commodification to be monetized. Whilst Zuboff emphasises the role of Big Tech executives in the formation and implementation of SC, Kienscherf (2022) instead points us in the direction of Capitalism itself – as whilst it was the executives who devised and implemented this system, it was not 'under self-selected circumstances' (Marx 1852:5) but instead was a

reaction to the pressure to accumulate capital to sustain digital advancement. In this way, neoliberal Capitalism provided the ‘conditions of possibility...of surveillance capital’ (Kienscherf, 2022:24). Moreover, surveillance capital only retains its usefulness insofar as it facilitates the circulation of other commodities – material goods and services whose circulation pervasive surveillance and targeted advertising seek to accelerate the consumption of. There is, therefore, a metabolic relationship between SC and neoliberal Capitalism; one in which surveillance capital’s use value lies in its ability to more effectively sell commodities.

SC does represent a newness in its modes of extraction, as data collection and commodification is a form of capital accumulation that escapes being captured by understandings of neoliberal Capitalism. However, these modes of extraction are not, or have not yet been, universally adopted. Whether this be a case of overstating the novelty of SC or of Zuboff being premature in stating SC’s dominance, neoliberal Capitalism continues and shapes the context in which SC is situated. On this note, Kienscherf (2022:19) states: ‘we ought to consider surveillance capital as a specific fraction of global capital and surveillance capitalists as a particular faction within the global capitalist class, rather than view surveillance capitalism...as a radically new type of capitalism’. In contrast to claims of novelty, SC is a Capitalism with concrete predecessors that led to and enabled its development. SC should therefore be situated within its wider context, a context in which SC speaks to the actions of Big Tech corporations but has yet to become the universal context.

3.5 Epistemology: Total Knowledge

Within SC, numerous epistemological claims are made regarding both SC’s pursuit for total knowledge and certainty, and seemingly Zuboff’s agreement that through SC mechanisms this is possible. This section therefore concerns epistemological assumptions on two levels; at its most basic this concerns the epistemological positions held by surveillance capitalists, before addressing those that are implicit within Zuboff’s

writing. Within the outward looking perspective of SC, these epistemological assumptions on behalf of surveillance capitalists take two forms; (i) the right to know, who decides who knows, and epistemic injustice (Zuboff, 2020), and (ii) the epistemological justifications of data collection and analysis. Looking internally within the work, two forms of epistemological assumptions are identified; (i) the emphasis on objectivity and behaviourism, assuming that all can be knowable, and (ii) the assertion of social certainty over social democracy, that all is knowable.

3.5.1 Asymmetries of Knowledge and Justifications

Within SC's ideology and operation, Zuboff emphasises increasing asymmetries of knowledge accompanied by an ideological underpinning of security through knowledge accumulation. A primary concern for Zuboff stemming from SC is that of knowledge acquisition, and the subsequent ownership of knowledge regarding user action and behaviour. Later conceptualising this as 'epistemic inequality' (Zuboff, 2020:175), the widening gap between user self-knowledge and the knowledge surveillance capitalists have of users is symptomatic of surveillance and analysis. Zuboff underpins asymmetries of knowledge as epistemic inequality through three key questions; 'What is the distribution of knowledge? What are the sources of authority that legitimate the distribution of knowledge? What is the power that sustains that authority?' (Zuboff, 2020:176). Or, more simply, "Who knows?" "Who decides who knows?" "Who decides who decides who knows?" (Zuboff, 2020:176). Within this Zuboff recognises the right to know asserted by surveillance capitalists, whilst further acknowledging the corporation's assertion of the right to remain unknown amid opaque operations and digital systems. Comparatively, the users right to assert ownership of their own data is diminishing amid a lack of protective legislation and regulation of corporate activities. The self-appointed right to know that has been granted by SC reinforces this, with this being fortified by an epistemological justification to do so.

This epistemological justification of knowledge asymmetries takes two primary forms; (i) security and (ii) efficiency. Zuboff describes the adoption of Google's surveillance techniques by the US government following the 9/11 terror attack (2019a:112-121), with the state-implemented scraping of internet data being justified as a protection of national security. What is asserted here is that all *should* be known in the interests of security and protection, an epistemological justification that serves to legitimise pervasive surveillance and disregard calls for privacy. In the wake of this justification, attempts to assert a right to privacy are met with attacks to one's moral character; with suspicions being cast upon those who seek privacy from pervasive surveillance. However, as Zuboff asserts, '*If you've got nothing to hide, you are nothing*' (2019a:479, emphasis in original). The second justification lies with the aim of 'social efficiency' (2019a:429), in which all should be made known to improve user experiences and the efficiency of the digital system.

The utilisation of data collection and analysis, if not for the purposes of national security, serves the improvement of digital products and services – for the 'greater good' of digital societal efficiency. This justification furthers the cause of instrumentarian power and the collective order (see page 40-45), as the loss of individual freedoms is positioned as serving to benefit the majority. However, as Zuboff states, the 'greater good' justification comes imbued with a profit accumulation motive; 'oriented toward the interests of the owners of the means of behavioral modification and the clients whose guaranteed outcomes they seek to achieve' (2019a:432). Within this epistemological justification of the 'greater good', there is no democratic consensus that has been determined to ensure this truly reflects the interests of those whose surveillance is fuelling this drive. As Zuboff poignantly states: 'The greater good is someone's, but it may not be ours' (2019a:432). Being reflective of user agency diminishing in decision-making processes, this justification of knowledge acquisition and ownership serves only profit accumulation whilst operating under the guise of societal improvement.

3.5.2 Total Certainty

The epistemological assumptions inherent with SC ideology are made clear by Zuboff, however those that are conveyed within the work are comparatively left unexplored. Ultimately, by discussing the ways in which SC is able to render all parts of the human experience as knowable conveys that entire knowability, and total certainty, is possible. This approach seems appropriate when considering Zuboff's calls for protective legislation of critical human rights the right to the future tense (2019a:328, see page 46) and the right to sanctuary (2019a:475, see page 47), as advocacy for these critical human rights would seem debased if not for an epistemological position supporting that they were being undermined. Whether or not this is the case is not the discussion taking place here, as Zuboff makes compelling arguments in support of this, but it is rather the implications of this epistemological position that need to be explored.

Zuboff states that through the collection and analysis of behavioural data, those aspects of ourselves which escape our own understandings can become knowable to surveillance capitalists (2019a:11). Intimate details of selfhood can be gleaned from personal data, rendering these parts of the user knowable to surveillance capitalists. What this conveys is an implicit emphasis on behaviourism, in which those intimate details of selfhood are exhibited and can be understood through behavioural data alone. Furthermore, an underlying assertion within SC is that all *is* knowable; that the encroaching of this system into every facet of our lives and our selfhood is being accomplished. The conceptualisation of total knowledge and certainty assumes that this is truly possible; that no facets of the human experience are unreachable through pervasive surveillance of behaviour.

The inference at both levels is that we can produce knowledge about all facets of the human experience, that no part of this is now unknowable or unreachable to SC systems, and that the entirety of this can be captured within behavioural data. This seems to create a behavioural paradox within Zuboff's work; one in which, whilst strongly advocating for the protection of internal selfhood, it seems that this can be captured externally through

behaviour. The following section shall discuss this paradox further by expanded on the ontological implications of this, however this also produces an epistemological paradox concerning knowledge of the self. The further claim that all *is* knowable, thus we reach SC's total certainty, is highly contestable. Although this claim may be plausible if situating this within the empirical realm, in which social experience can be empirically evidenced and thus understood through behavioural data, this still leaves much outside of the reach of total certainty. Without overstating Zuboff's intentions when conceptualising total certainty, after all no distinctions are made regarding whether this is being applied only at the level of empiricism or not, the claim that all is knowable, that we can now produce knowledge about and understand all facets of the human experience, loses traction when scrutinised further.

3.6 Ontology: *Being in The Age of Surveillance Capitalism*

The framework of SC outlined by Zuboff describes a capitalist system that seeks to expose and commodify aspects of reality and the human experience that remain uncertain, aspects which are ever evolving and dynamic in their intangibility. The flattening of the human experience into identifiable traits, demographics, and behaviours portrays a lesser version of experiential reality than could ever be measured, documented, and analysed, and through this system the experience of *being* is reduced to data and analytics. According to Zuboff, life within the SC system is technologically-mediated; rendering human subjects as behaviourist objects, entirely knowable to the digital systems operating seamlessly around us. And yet, the underlying ontological assumptions being made here regarding what constitutes the human experience are left unaddressed within Zuboff's work.

Firstly, Zuboff states that through the system of SC, the metaphysical state of human beings has changed: 'We are no longer the *subjects* of value realization...Instead, we are the *objects* from which raw materials are extracted and expropriated' (2019a:94, emphasis added). When discussing the right to the future tense (see page 46), Zuboff

states that through the eradication of human will to serve SC's total certainty 'the future collapses into an infinite present of mere behavior, in which there can be no subjects and no projects: only *objects*' (2019a:336, emphasis added). This signifies a shift away from human subjectivity and towards objectivity within Zuboff's conceptualisation of SC, with the ontological force of SC – SC's ability to causatively change and influence – reducing subjectivity to objectivity. This conveys the functioning of SC as reducing the human experience to objects to be observed; subjects reduced to data objects for observation and analysis. Human as object is but one way the datafication of the human experience has been conceptualised; the previous section discussing digital identity outlines some of the ways in which this has been considered within Surveillance Studies (see page 56-59). The shift from subjectivity to objectivity is underpinned by the centrality of behavioural data, and ultimately behaviourism, to the SC model – presenting a complex paradox within the work itself.

Ontologically, SC portrays a behaviourism paradox; simultaneously seeking to convey the ineffability of the human experience whilst describing the ways in which this experience is entirely behavioural and manipulatable. The system of SC is convincingly described as holding a behaviourist view of human beings; with users being made known and commodified through the behavioural data being collected and analysed, and this being utilising for behavioural modification. However, it becomes paradoxical to refer to those aspects of the human experience that are uncertain and unknowable yet claim that this is what is being made knowable through SC systems. This paradox produces two possible outcomes; either (i) the human experience can be rendered entirely knowable through behavioural data alone and SC is effective in achieving its goals, or (ii) the ineffability of the human experience can never be captured and understood through behavioural data, and thus the SC system is destined to fail in its quest for total certainty.

Zuboff's ontological perspective is somewhat clarified in Chapter 11's *The Right to the Future Tense* and discussions of the notion of free will:

'I recognize my direct experience of freedom as an inviolate truth that cannot be reduced to the behaviorists' formulations of life as necessarily accidental and random,

shaped by external stimuli beyond my knowledge or influence and haunted by irrational and untrustworthy mental processes that I can neither discern nor avoid.' (2019a:330)

Here she rallies in favour of the human existence's ineffability, an inherent self that escapes SC's attempts to intervene and obstruct through external stimuli. This 'inviolable truth that cannot be reduced to the behaviorists' formulations of life' sits in direct opposition to the threats to the human experience outlined before and after, positioning aspects of the human experience that remain unreachable through SC's mechanisms. The paradoxical ontological assumptions being made simultaneously are unaddressed within Zuboff's work with both claims sitting horizontally from another, leaving this open to interpretation and without a point of closure. Zuboff's behaviourist objects leave much to be explored concerning agency and autonomy in the digital context. As this thesis progresses and contributions to theoretical knowledge made, the behaviourism paradox necessitates that the dynamics of agency and autonomy comprise a key facet of theoretical development.

3.7 Resistance: what now?

It is within Zuboff's brief discussions of resistance to SC that limitations within the work truly present themselves. Whilst resistance efforts are discussed throughout the work in the form of short case studies of legal challenges to data collection (2019a:27, 57-61), and despite Zuboff calling for human rights legislation to be expanded to reflect 'new' critical human rights to be defended and Big Tech corporations held accountable, the conceptualisation of resistance to SC remains underdeveloped. The question of responses and resistance to SC is the focus of a five-page section titled 'Every Unicorn Has a Hunter' (2019a:488-492), which begins by reinstating the seeming futility of resistance efforts – 'we are trapped in a condition of "no exit"' (2019a:488). What primarily emerges within this discussion are tactics to '*hide in our own lives*' (2019a:489, emphasis in original), attempts at obfuscation of personal data and the bypassing of surveillance systems. Numerous tactics are listed, including signal-blocking phone

cases, false fingerprint prosthetics, technologies to disrupt facial recognition cameras, and a clothing line called 'Glamouflage' which produces garments designed to confuse videographic and photographic surveillance technologies (2019a:489).

Products designed to confuse data collection systems offer a functional means by which to lessen the data that can be gathered, however presents a picture of resistance as something to be purchased through consumer goods. Protection from this system is therefore only available to those who have the disposable income to purchase 'a quilted coat that blocks radio waves and tracking devices' (2019a:489) or the ability to install software that disrupts surveillance. Promoting the purchasing of obfuscation 'products' individualises the act of resistance, wherein resistance becomes self-regulatory and relies on a user's awareness of these products to begin with. Despite charting numerous cases of successful collective action against corporate surveillance and the implementation of protective legislation in response to user concerns, the expected empowering message of collective resistance is absent as the work draws to a close. If Zuboff's own conclusion to how one should resist SC is to adopt tactics to hide ourselves from surveillance technologies, these efforts fall to the individual and rely on user knowledge of surveillance – despite her earlier assertion that 'the individual alone cannot bear the burden of this fight' (2019a:482). This leaves a lot to be considered when seeking to answer the question of resistance, both at the individual and collective levels, as well as further considering what forms resistance can take and who these efforts are available for – questions which shall be explored further in Chapter 10 of this thesis (see pages 213-231).

3.8 Conclusion

This chapter has sought to address the underlying assumptions embedded within Zuboff's SC, with seven areas of critical enquiry: (i) the absence of Surveillance Studies within SC, (ii) technological determinism within SC, (iii) the Marxist approach to SC and Big Data, (iv) the issue of novelty within SC, (v) the epistemological implications of the

work, (vi) the ontological implications, and (vii) the issues surrounding resistance within SC. In doing so, the historical and academic context of SC has been explored, with valuable insights being gained from this process and developments to our understanding of SC.

Through addressing the absence of Surveillance Studies within SC, the legacy and influence of Surveillance Studies within Zuboff's writing becomes apparent. Not only have the issues discussed by Zuboff remained an area of study within Surveillance Studies for decades, engaging with this has allowed for a nuanced understanding of the implications of digitalization for how we conceptualise modes of surveillance (see pages 53-56) and human identity (see pages 56-59).

The technological determinism inherent within SC has produced two key points for consideration; (i) the need to incorporate user viewpoints and voices in understanding the implications of SC, and (ii) the further need to develop a nuanced understanding of **user relations to technology** insofar as life is **technologically-mediated**. This is an area that shall comprise a key facet of this research moving forward, necessitating an engagement with Postphenomenology (Ihde, 1990; Verbeek, 2011) to support an approach to SC that moves beyond technological determinism and towards developing a dynamic understanding of relations to the digital.

Marxist perspectives of Big Data Capitalism have further developed our understanding of SC as a form of Capitalism, one in which the processes of expropriation and user labour have distinct historical precedents and serve the accumulation of surveillance capital. With this being followed by addressing the perceived novelty of SC, we can further recognise SC as a development of neoliberalism with surveillance capital serving to increase the efficiency of commodity exchange and broader capital accumulation – with its use value being defined by this efficiency. SC is therefore situated within the wider, continuing context of neoliberal Capitalism, with SC representing a developed and efficient mechanism through which to **accelerate rates of consumption** and thus forming a metabolic relationship between SC and neoliberal Capitalism.

The epistemological and ontological assumptions embedded within SC highlight the behaviourism paradox at work. Through claims of total certainty, the urgency to defend critical human rights is justified yet goes against claims of deeper selfhood. If all can be understood through behavioural data, SC is victim to a behaviourism paradox; simultaneously seeking to convey the ineffability of the human experience whilst describing the ways in which this experience is entirely behavioural, manipulatable, and knowable. These assumptions are strongly contestable, and therefore, presents the need for this research to assume an epistemological position which allows for the recognition of the social, empirical realm whilst also acknowledging the deeper, ineffability of human experience. This takes us towards developing a **layered approach to harm**, wherein the behavioural commodification emphasised by Zuboff can be situated at the empirical realm whilst the hidden harms to autonomy she emphasises can be investigated as lying at **a level beyond the social**. However, it must be confronted that this presents distinct methodological issues if seeking to conceptualise the production of harm beyond the realm of empiricism, especially when advocating for the centring of users' voices to understand SC's impacts. Zuboff's emphasis on the hidden influence of SC raises questions for how research can be designed if users themselves are unaware of digital manipulation and may therefore be naïve to the impacts of this. This is an issue that shall be addressed in Chapter 5 of this thesis (see pages 101-115), as conceptualising this harm is ultimately the task of this thesis.

From discussing Zuboff's writings on resistance to SC it becomes clear that a deeper understanding of what resistance means for SC and what SC means for resistance needs to take place. Given the limited space designated to this within SC, it is imperative that resistance form a more central part of this thesis and is done so in a way that further addresses **who these resistance tactics are available for**. Whilst Zuboff discusses products that may assist an individual in their resistance efforts, this fails to acknowledge the limited availability of these beyond certain demographics and negates issues surrounding user awareness of *the need for* resistance. Resistance therefore needs to

form a key facet of this thesis, to provide a more nuanced understanding than is captured within SC and **the barriers to resistance that persist** (see Chapter 10, pages 218-236).

Finally, whilst this chapter has discussed the limitations of and assumptions embedded within Zuboff's work, this is not to undermine the rigour of the framework she offers. As has been discussed within Chapter 2 (see page 48-50), having consulted numerous frameworks that conceptualise digital-era Capitalism, SC remains the clearest framework offered for further application and development. The limitations that have been discussed here do not undercut the depth of theoretical exploration within Zuboff's work but have instead sought to understand where this can be developed further – often comprising ways that are beyond the scope of *The Age of Surveillance Capitalism* (2019a) itself. What has become apparent through this are the different disciplinary lenses from which Zuboff and this thesis are approaching her work; with her aim being to outline an economic system distinct to the digital era, and here it being to develop an understanding of the harms that emerge from this. The original contribution of Zuboff's work therefore cannot be disputed and this serves as an invaluable resource from which to begin to engage Critical Criminology with the impacts and implications of digitalization.

This therefore establishes the aim of Chapter 4; in seeking to develop a Critical Criminological understanding of SC, we must first chart the ways in which Critical Criminology has already explored some of the issues discussed by Zuboff. As SC is a capitalist development, it becomes clear that to assess its applicability to Critical Criminology the frameworks through which this is explored must be selected upon their critical engagement with Capitalism and the digital. This then forms an inclusion and exclusion criteria for the Critical Criminology frameworks to be explored in Chapter 4, from which four perspectives emerge; the initial Marxist perspectives discussed previously – (i) corporate crime (Tombs & Whyte, 2015; 2020), (ii) state/corporate crime (Michalowski & Kramer, 1987, 2007), and (iii) Social Harm (Hillyard & Tombs, 2004; Pemberton, 2016) – and the need to explore works within (iv) Digital Criminology (Powell, Stratton & Cameron, 2018).

Chapter 4: Critical Criminology, Zemiology, and Digital Harm

From Chapter 1's prior evaluation, it becomes clear that 'digital harm' is a concept that cannot be approached through a singular Critical Criminological lens and instead warrants an interdisciplinary and multifaceted framework to fully address. The evaluation in Chapter 1 produced several key themes that warrant further consideration: power, the corporation, Capitalism, surveillance, control, the digital, and autonomy. These themes speak to a range of perspectives originating both within and outside of Critical Criminology. Literature gathered from studies of crimes of the powerful, Digital Criminology, and Zemiology are explored with the aim to understand the **utility** of Critical Criminology in addressing SC – and ultimately, in forming an understanding of Digital Harm. This proceeds in a two-part structure; firstly, outlining the contributions that can be made from each of these perspectives and the ways in which each is currently equipped to recognise emergent digital harms, before secondly moving to highlight the areas within these perspectives that require further development. This structure highlights the first key finding of this evaluation: Critical Criminology is not currently equipped to singularly acknowledge and interrogate the multifaceted dynamics of Digital Harm. The nuances of SC and the digital context have rendered many key Critical Criminological frameworks insufficient to interrogate the deepening harms being inflicted, and thus a fundamentally interdisciplinary approach is needed to interrogate the harms of digitality.

This chapter proceeds in the following structure; firstly, works within studies of Crimes of the Powerful shall be explored, with the implications for studies of corporate crime and state/corporate harm (Tombs & Whyte, 2020) being explored. The second section furthers Chapter 1's discussion by drawing upon works within Digital Criminology (Powell, Stratton & Cameron, 2018) to understand how Critical Criminology has engaged with the

digital context and understood digital technologies. The final section explores the implications of SC for studies of harm, drawing upon the work of Pemberton (2016) and furthering discussions of relational and autonomy harms considering the identified harms of digitality. The closing section of this chapter brings this discussion to a close as points are drawn together to encompass the recommendation for a bespoke, digitally informed approach to studying the harms of technologization and the pillars for the development of a **Digital Zemiology** are outlined.

The research question of this chapter is as follows:

1. **What developments are required of current Critical Criminological theory to embed an understanding of ‘Digital Harm’?**

4.1 Developments within Crimes of the Powerful

The foundation of this analysis is built upon attempts to confront digitality through numerous Critical Criminological perspectives and frameworks, and in doing so gaps are identified within current knowledge. Of the frameworks investigated, corporate crime and state/corporate crime were found to be among the most promising in addressing some of the key themes of SC and digitality. Therefore, this section shall utilise these perspectives to explore the **limitations** of these frameworks and the **opportunities** for development within them. Vital areas of investigation for the understanding of Digital Harm that this section explore include deepening our understanding of the role of the State/Corporate relationship, emergent developments in capital accumulation, and an acknowledgement of digital modes of power and the implications of this for studies of crimes of the powerful.

4.1.1 Deepening our understanding of the State/Corporate Relationship

Perhaps the most auspicious perspective through which to approach digital harms stemming from SC and surveillance capitalists, Corporate Crime and State/Corporate harm offer frameworks which from the outset appears to be a viable resource. Primarily, frameworks of corporate crime typically define this as illegal acts or omissions because of deliberate decision-making or culpable negligence within a legitimate formal organization that are committed on behalf of the corporation, or in pursuit of its formal goals (Pearce & Tombs, 2019; Tombs & Whyte, 2020). As Chapter 1 explored (see page 19), the harms investigated within this framework often take the form of financial crimes, crimes against the environment, crimes against workers, and crimes against consumers (Tombs & Whyte, 2015; 2020), with harms of globalisation making a recent addition to this framework (Twyman-Ghoshal, 2019; Tombs & Whyte, 2020). However, this approach is anchored within a stunted understanding of corporate conduct and capital accumulation, a notion that will be interrogated in the following section, and thus a reductionist understanding of the relationship between the corporation and the State. This section aims to scrutinise the focus of corporate crime and state/corporate crime frameworks, drawing attention to the developments needed for this to address state/corporate relationships in the digital context and the implications of digitality for these global relationships.

4.1.2 Corporate Crime and Surveillance Capitalists

Discussions of corporate wrongdoing have become ubiquitous not only within Critical Criminological circles but within wider mainstream discourse. The public have a heightened awareness of corporate conduct and greater access to information about the corporations whose products and services proliferate their lives (Copeland & Boulianne, 2020). Despite this, wrongdoing remains a commonplace occurrence within corporate structures, as the modern corporation has long been seen to have ‘an enabling structure and a criminogenic organizational culture’ (Twyman-Ghoshal, 2019:3). Viewing the

corporation as criminogenic is no new claim (Szasz, 1986), as corporate crime remains one of the longstanding areas of study within Critical Criminology (Simpson, 2019). However, approaches to corporate harm remain fixed around categorical frameworks and subtypes which offer a reductionist understanding of conduct in a context which allows for corporations to wield unprecedented power and control internationally. The previously mentioned categories of corporate crime (Tombs & Whyte, 2015; 2020) focus our attention on a pre-determined subset of harms which, whilst providing a beneficial starting point, seemingly fail to account for corporate actions that surpass this framework. Whilst harmful corporate conduct can be seen to split into three subtypes; either the creations of a product that is harmful, the production of products via a harmful process, or functions enacted in the aid of profit that have ‘predictably adverse consequences’ (Passas, 2005:776), this too falls foul to the same issues. The complication in utilising this to approach the harms of surveillance capitalists lies in the recognition that their practices appear to bridge all these subtypes of corporate harm – and beyond. In this way, it seems that to utilise such a framework to approach Digital Harm runs the risk of reducing widespread harm to categories that neglect the deeper nuances of digitality. To add to this even further, to focus on the conduct of specific corporations negates the wider viewpoint that is necessary to confront the emergent harms of digitality.

Current discussions focus on the use of techniques of neutralization (Sykes & Matza, 2017) in corporate social responsibility (CSR) (Schoultz & Flyghed, 2020), and the need for this to be developed away from the treating of neutralization categories as ‘gospel’ and instead to focus on the continuing functions of neutralizations in rationalizing corporate wrongdoing (Maruna & Copes, 2005). CSR has long been a point of investigation within discussions of corporate crime, as growing public awareness of corporate conduct has led to the increased emphasis on ideas of responsibility and sustainability being embedded into corporate manifestos and mission statements (Fatima & Elbanna, 2022). The initial conceptualization by Sykes and Matza highlight neutralizations as preceding corporate wrongdoing, however modern techniques of this, whilst being seen as preceding wrongdoing in the form of CSR, are often utilised after wrongdoing has been

uncovered. The corporate conduct of SC lies outside of Sykes and Matza's original categories, as neutralizations are embedded in the very development of the logic of accumulation. This will be discussed in more detail later in this chapter; however, this development allows for a more effective form of neutralization which embeds harmful practices as normalized and allows for their continuation. The influence corporations have over the establishing of discourse and their ability to utilise widespread resources in the formulation of 'truth' grant creditability in the public realm (Whyte, 2016), a mechanism which can only be seen as increasing in efficacy in the digital context.

There are clear distinctions to be made which distinguish the 'traditional' corporation from the surveillance capital corporation, with the need to draw these distinctions and develop understandings accordingly being imperative to our understandings of Digital Harm. Certain attributes set the surveillance corporation apart, notably that; (i) the product is access and not only a tangible product or service, (ii) the surveillance corporation is the seller of access to advertising corporations, not only products to consumers, (iii) the surveillance corporation utilises distinct mechanisms that are different from 'traditional' corporations, (iv) the surveillance corporation is the pioneer of a system of Capitalism which has fostered state reliance. These distinctions are difficult to assimilate into current corporate crime frameworks and represent barriers within current knowledge.

The conduct of surveillance capitalists disrupts the traditional corporate-consumer dynamic upon which prior understandings are built – the surveillance corporation represents a higher level of conduct than the corporation-consumer exchange of products, as the surveillance corporation is the holder and seller of access to the advertising corporation before the product can be advertised to the consumer. In this way, the surveillance corporation represents the proverbial top of the corporate food chain and offers a service/product that escapes conceptualisation in current frameworks. In contrast to prior systems of power, the system of SC was pioneered by corporate entities and adopted by the state – an approach which has fostered not only state reliance on the mechanisms of power offered by SC, but also on the economic

power of surveillance profits (Zuboff, 2019a). This alone implies an asymmetrical power balance which sees the power of the state as contingent on the mechanisms of corporate entities. The role of the corporation has shifted away from prior Critical Criminological understandings which saw corporate conduct as subject to state accountability and management, and instead indicates a corporate power which fosters state reliance on the surveillance economy.

4.1.3 The Role of the State

Zuboff's SC brings to our attention the complexities of the state/corporate relationship and in doing so further highlights the need for Critical Criminological understanding of this relationship to be deepened. Early on in explorations of corporate crime, the influence corporations exercise over state institutions was acknowledged (Clinard & Quinney, 1973), and references to this power imbalance are made within discussions of SC (Zuboff, 2019a). However, the role of the State in the development and incorporation of SC into society cannot be denied – through the reliance on SC mechanisms to enact State powers (see page 24-25) to the economic prospering through the housing of SC corporations – however, there has been a lack of such acknowledgment of this metabolic relationship within Critical Criminological circles, with few having made this link previously between corporate profits and state reliance (Friedrichs & Rothe, 2014). The harmful conduct of corporations is often enabled by their ability to maintain close relationships with the state, serving to legitimise their behaviour and allowing for the continued avoidance of accountability for harmful practices through either the failure of the state to enforce existing laws or by the lack of state regulation.

Definitions of state-corporate harm recognise the intertwined nature of the two institutions, reflecting harmful practices that occur when “one or more institutions of political governance pursue a goal in direct co-operation with one or more institutions of economic production and distribution” (Michalowski & Kramer, 2006:15). This relationship manifests two avenues of State implacability in corporate harm: state-

initiated or state-facilitated (Michalowski & Kramer, 2007). Applying this lens to the role of the State in SC allows for further mechanisms through which harms are inflicted to be identified. The aim of this section is to bring this to light through the incorporation of SC into our understanding of harms inflicted through State action/inaction (Tombs & Whyte, 2015), and, in doing so, acknowledge a fundamental shift in mechanisms of State power.

The role of state inaction in the proliferation of SC manifests in numerous ways. The failure by the state to regulate corporate practice is a long-evidenced means through which corporate wrongdoing is facilitated (Tombs & Whyte, 2020), and this is further witnessed in the wake of SC. Tombs and Whyte (2015) argue that the state bears culpability in the perpetuating of corporate crimes through the failure to develop adequate laws and regulations that would prevent harmful practices – regulation can thus be seen as something that states ‘do’ to ‘control’ corporations (Tombs & Whyte, 2020:17), and in the case of surveillance capitalists this is neglected to an even greater degree than with traditional corporations that understandings are based around. If regulation is to be understood as a means by which capitalist social orders are governed and normalized (Aglietta, 2000; Tombs & Whyte, 2020) instilling societal hegemony (Gramsci, 1971), the state bears culpability for the furthering of SC through the failure to regulate surveillance capitalists since their conception and is a facilitator of digital harms. However, this is in keeping with prior understandings of the state/corporate relationship.

Where contributions to understandings of this relationship lie through the lens of the state as a facilitator of corporate harms is through the state’s failure to develop understandings of surveillance capitalists. Over two decades have passed since the conception of surveillance capitalists and yet the state’s failure to develop an understanding of how these corporations operate persists. Recent cases demonstrate how the outdated language used by the state to attempt to understand surveillance mechanisms furthers this failure to develop (Paul & Bhuiyan, 2023), as a lack of state understanding of corporate conduct allows for the continuation of harmful practices and their further normalization through a lack of response from the state (Carson, 1979). This

allows for harmful actions to be treated as isolated events, as opposed to being indicative of any generalizable arguments that can be made concerning corporate conduct (Mathiesen, 2004) and, by proxy, State involvement in said conduct. Recent responses of the state in the wake of Cambridge Analytica (Brown, 2020; Hu, 2020) and privacy concerns surrounding social media platform TikTok (Touma, 2022), forming just one example, individualises these cases to isolated events, ignoring the system within which this conduct is facilitated and normalized. Considering this, the state is not only a facilitator of SC harms through a failure to regulate and to develop adequate regulations but is further a facilitator through a failure to develop understandings and knowledge of SC and its mechanisms in the digital context. This asymmetry of knowledge between state and corporation represents the need for a new understanding of the power relations between the two.

However, the state is not simply a passive facilitator but further perpetuates SC harms through its own action. Contributions to state-initiated harms (Tombs & Whyte, 2020) through the utilisation of SC manifest in the form of further incorporation of surveillance mechanisms into governmental powers, the utilisation of such mechanisms to further state objectives, and thus the further normalization of these practices (see page 24-25). Surveillance has long been a key facet of state power (see Storch, 1975), however it is within the digital context that its presence has become increasingly obfuscated and, arguably, normalized. Furthermore, the initiation of state-surveillance harms through cases such as those exposed by Edward Snowden make visible the state's mass surveillance of communications, including of its own domestic citizens (Koops et al., 2016). This represents a shift in power dynamics between the state and the corporation, requiring further investigation to understand the role of the state in practices of mass digital surveillance.

4.2 Digital Criminology

Underlying within prior discussion is the recognition that any theoretical base through which to understand SC and digitality must be fundamentally distinct from prior Critical Criminological understandings due to one key factor alone – the Digital. SC's power is enacted almost entirely through digital technologies – whilst mechanisms strategically flow in and out of the physical space, it is within the Digital that these mechanisms of power are anchored. Herein lies our point of departure from much of what has previously been discussed – Critical Criminology has been slow to come to terms with technological advancements and, in doing so, has failed to recognise the harms specific to this digital epoch. Digital Criminology (DC) has emerged in the wake of this. A perspective still in its infancy, DC represents an abundance of opportunities for further development and a potential place from which SC can be recognised and acknowledged – if certain assumptions about the Digital can be overcome and parameters of what constitutes 'harm' within the Digital widened.

As it stands, DC is aware of its shortcomings (Powell, Stratton & Cameron, 2018). Attempts to approach harms within the digital sphere have fallen prey to the creation of an inherent dualism in the acknowledgement of 'cyber' crimes – theft becomes 'cybertheft', fraud becomes 'cyber fraud', etc. (Jaishankar, 2007) – as opposed to approaching this as unique phenomena. Thus, developments in DC have become stunted by an understanding of harms within the digital sphere being developed through the transposing of 'crime' frameworks into an environment in which dynamics of harm production differ from those in which understandings were developed. To overcome this, there is a need to abandon anchor points within traditional understandings of harm and begin toward a true utilisation of the possibilities presented by DC. This must further recognise that within the digital context, understandings of harm production must overcome the binaries of the real and the digital. This section shall chart the opportunities presented by DC, highlighting the points at which this can be utilised to

recognise SC and Digital Harm, and the points of departure for which development is needed.

Stratton, Powell & Cameron (2017) utilise the concept of the ‘digital society’ to explore the potential for an interdisciplinary approach to exploring how technological advancements impact crime and criminalisation, as well as everyday life. To date, however, Critical Criminology’s focus has foremost been on the implications of this for policing and police investigations, legislative frameworks, and the motivations of cybercriminals – which often serves to further the individualising ‘rational offender’ concept and explore technology’s role as purely a tool in criminality (Stratton, Powell & Cameron, 2017). These works shall be discussed further in Chapter 6 (see pages 117-123), however such research has unfolded largely to the comparative neglect of exploring wider perspectives of how technologies and the incorporation of the Digital enables – and represents new frontiers of – harm production. Here, Stratton, Powell & Cameron (2017) outline seven avenues as opportunities for Critical Criminology to embrace the digital, emphasising the need to investigate the furthering of social inequalities within the digital sphere. These avenues seem promising – drawing attention to digital surveillance, digital space, and digital engagement – however are all still firmly rooted within notions of crime, victimisation, and state power that neglect the diffuse harms of digitality. Whilst important work is being done to address the furthering of social inequalities in the digital space (Büchi & Hargittai, 2022), there is minimal recognition of this digital divide within Critical Criminology and how this impacts experiences of harm. Therefore, embedded within recognitions of the digital must also be a recognition of how this serves to further proliferate the impacts of social inequalities – a point that shall be returned to in Chapter 10 (see pages 224-226).

Similarly to the formulation of ‘cybercrime’, conceptualisations of DC have fallen prey to the inherent binaries within understandings of the online versus the offline, and thus instances of harms are separated by this perceived divide in experiential space. Familiar to Critical Criminology is the investigation and interrogation of notions of space, with undertones of power and control underpinning the investigation of physical spaces, their

effects and boundaries, through Penology (Scott, 2008) and Border Criminology (Bosworth, 2017). These two examples, whilst not exhaustive, are key examples of the investigation of spaces of power and control. However, with such perspectives being fully realised within the field, this begs the question of why the spaces of the Digital have not been perceived in the same way. To aid in amending this, Hayward (2012) brings our attention to the potential of utilising spatial theory in our understandings of harm, providing an analysis of this within virtual and networked spaces. However, this analysis is provided through the lens of creating an understanding of the digital space under the guise of 'how human beings use and abuse it' (Hayward, 2012:455), furthering understandings of the Digital as a 'tool' for criminality. This falls short of providing a conceptualisation appropriate for analysing the disembodied and diffuse network of mechanisms that form SC and fails to recognise the harms that can occur beyond the capacity of human actors. This separatist investigation of the online versus the offline, the real versus the virtual, continues to stunt the development of a critical understanding of digitality, as this continues the assumption that the online and the offline can be separated. A binary understanding of these realms as separate fails to recognise their intertwining and further serves to facilitate reductionist understandings of digitality. Moves toward a multi-disciplinary approach has led to the realisation of technosociality (Brown, 2006). In utilising both social and technological theories, this represents the need to understand crime and criminality at the increasingly blurred intersections between 'reality' and virtuality, demonstrating that social theory alone is not sufficient to analyse and understand crime in contemporary societies (Brown, 2006), nor sufficient to understand harm. An interrogation of space through DC allows us to recognise the potential for digital technologies to alter the way we experience the sense of being in an environment. This has vast implications for understanding user experience of digitality, as this allows for the barrier between 'online' and 'offline' to begin to be overcome and for our understandings of their synergy to unfold.

To add to this further, Wood (2022) draws attention to the potential to utilise Postphenomenology in our understanding of technology harms. This further emphasises the need to 'consider how the human and the technological are mutually co-constituted'

(Wood, 2022:520), allowing for understandings of technological harms to surpass not only the online/offline binary but also prior theoretical positionings that saw the human and the technology as distinctly separate actors. This approach allows for the acknowledgment of technological ubiquity and of the role of technology in the extension of the corporeal self – as was explored through Surveillance Studies literature in Chapter 3 (see pages 52-59). The utilisation of Postphenomenology for studies of harm requires further exploration and shall be expanded upon further in Chapter 6 (see pages 123-134), as the transformative capacity of Wood's work (2021; 2022) for interrogating the digital context forms a key development.

4.3 Social Harm in the Digital Age

In the wake of prior analyses, zemiological and Social Harm approaches must be utilised to address digitality. However, what becomes clear from these considerations is that current conceptualisations of harm are insufficient to recognise the intimate and deeper levels at which harm is being inflicted. Current conceptualisations of harm are purposefully broad, allowing for malleability and flexibility in their interpretation (Hillyard & Tombs, 2004; 2007; 2017; 2021; Pemberton, 2016). This broadness aids the Social Harm approach as it is 'partially to be defined in its very operationalization, in its efforts to measure Social Harms' (Hillyard & Tombs, 2004:20) – therefore this section aims to further this process of definition, by advancing the applications of this and highlighting the conceptual gaps that must be filled.

Understandings of Social Harm have long been underpinned by a model of different categories of harm. The mostly widely utilized version of this developed by Hillyard and Tombs (2004), as discussed in Chapter 1 (see pages 26-32), is ubiquitous across conceptualizations of harm and forms an invaluable contribution, through establishing an unprecedented reorientation of Critical Criminological research priorities. Despite this, attempting to apply these harms to SC and digitality has proven this framework to fall short of being able to adequately address the multitude of deeper, digitally embedded

harms being inflicted. These categories can address harms inflicted through the consumption of digital content – many studies have broached the psychological, physical, and sexual harms of the digital sphere (Keles, McCrae, & Grealish, 2020; Gewirtz-Meydan et al., 2023; Mishna et al., 2023; Rounsefell et al., 2020; Vitis & Gilmour, 2017), and financial (Whitty, 2019). However, the recognition of these harms is predominantly situated in the tangible, measurable realm of empiricism and harms that users are conscious of or can witness the effects of. Where this stalls is in the recognition of the unconscious, hidden influences of SC discussed in Chapter 2 (see pages 34-48).

In attempting to surpass this barrier of ‘tangible’ harms, Pemberton’s framework (2016) garners promising results. Exploring harm in the form of the (i) physical and psychological, (ii) relational, and (iii) autonomy comes far closer to recognizing the harms of digitality this thesis seeks to explore. Once again, the physical and psychological harms can be clearly articulated by prior explorations of digital consumption with these harms being visible in the impacts of social media for the mental health and body-image of young people (Harriger, Thompson, & Tiggemann, 2023; Marks, De Foe, & Collett, 2020), therefore a further expansion upon understandings of this facet of harm is not necessary within this section. Not only are these categories more attuned to invisibilised harms, but Pemberton’s conceptualization of harm also allows for the recognition of the *‘processes, flows, practices, discourse, actions and inactions that constitute the fabric of our societies which serve to compromise the fulfilment of human needs and in doing so result in identifiable harms’* (Pemberton, 2016:24). This is key for approaching digitality, as this allows for the ‘event’ of harm to be surpassed and instead for the processes and systems behind harm production to be recognized and further explored. Furthermore, Pemberton’s approach prioritizes an understanding of harm informed by a human needs-based approach, recognizing that to achieve self-actualization certain needs must be met. This provides an avenue into utilizing a human needs-based approach to harm which can provide an underlying rationale for which contributions to understandings of harm can be developed.

4.3.1 Implications for Relational and Autonomy Harms

Relational and autonomy harms are discussed by Pemberton through a sociological lens, exploring the implications of these predominantly from a social mobility standpoint, however this thesis aims to take this further through utilising the metaphysical implications of relational and autonomy harms to understand those inflicted by digitality. The rationale for these harms is underpinned by ‘disablements’ or ‘impediments’ to an individual’s ability to achieve self-actualisation (2016:28) – further echoing the impacts of digitality discussed within Surveillance Studies (see page 52-59). This section will outline potential developments to understandings of relational and autonomy harms in an attempt to more closely align this with findings within Surveillance Studies.

Firstly, Pemberton defines relational harms as taking two forms: ‘enforced exclusion from social relationships’ and ‘harms of misrecognition’ (2016:30). The first of these explores the ways in which exclusion from social relationships and networks can be injurious, citing that lack of support for childcare and domestic labour, for example, can be harmful for the development and maintenance of personal relationships, thus social exclusion results. The latter explores the symbolic injuries resulting from the misrepresentation of identities, the role of enforced public identities and stigmatization that may result in an individual feeling ‘othered’ within society. Within these understandings of the relational, ‘self-actualization is not necessarily a product of one’s own efforts, but a reflection of how this process is nurtured through supportive networks’ (2016:30) and therefore harm resulting in impediments/obstructions to this. Misrecognition harms acknowledge that the ‘ability to present one’s own identity in the way that they choose is a critical facet of self-actualization’ (Pemberton, 2016:31) and that imposed public identities possess a harmful capacity insofar as not representing an individual as they would wish to be viewed and therefore treated.

In developing this, the concept of enforced exclusion can be extended to the barriers SC presents to the functioning of meaningful relationships outside of online spaces. The impact of digitality, notably online platforms such as social media, has had on the

development of social relationships has previously been noted (Sjolie, Olsen, & Hempel, 2023), however this can be seen as a direct transposing of Pemberton's analysis to the digital space and is not necessarily a development of this framework. Where this can be taken further is through the ways in which algorithmic interference can prove an obstruction to social inclusion. Prior discussions of misinformation cite growing divides in political opinion (Morosoli et al., 2022) as a key example of algorithmic manipulation creating a climate within which discussion is progressively more difficult amid an increasingly radical binary. Algorithmic manipulation of political beliefs and emotional reaction has also been documented (Bond et al., 2012; Kramer, Guillory, & Hancock, 2014), with the ubiquity of Cambridge Analytica's manipulation of the US 2016 election and UK Brexit referendum providing key examples of its impacts (Brown, 2020). However, this is an extreme form of developing relational harm and the chronicled impacts of algorithmic manipulation for social exclusion are by no means the only forms this can take. Further investigation of this is required, however a brief analysis here allows for the relational harms of SC to be recognized.

However, and perhaps more urgently, contributions to harms of misrecognition allow for a confrontation of hidden influence within SC mechanisms. As Pemberton states the ability to present one's identity is a vital facet of self-actualization, and, as has been highlighted by drawing upon works within Surveillance Studies (see pages 52-59), a need which SC obstructs and interferes with. SC mechanisms of power actively impede the development and expression of individual identity through algorithmic hidden influence (Zuboff, 2019a), the ways in which this is implemented are numerous and span the commonly criticized algorithms of social media to the results shown by internet search engines and even further into being a vital aspect of profit generation within this system. This represents a deeper level of relational harm that through analysis we can begin to confront and investigate more critically, however this form of harm potentially surpasses the label of relational as what is outlined here represents an intervention in **relations to the self**, and further an overlap with harms to autonomy. This signifies a distinct form of harm and an opportunity for contribution to an understanding of Digital Harm. The

commodification of identity to serve algorithmic manipulation furthers this and warrants an investigation of the relational which looks deeper into the impacts on **self-relation**.

The implications for the present and future of human autonomy in the digital context has been a continued point of discussion throughout this chapter and is a key development to be made within understandings of harm. Pemberton defines autonomy harms as the experience by an individual of ‘fundamental disablement in relation to their attempts to achieve self-actualisation’ (2016:29), expanding that ‘self-actualization is predicated on the achievement of a sufficient level of autonomy insofar as an individual possesses the ability to formulate choices and has the capacity to act on these’ (2016:29). Pemberton explores autonomy harms through notions of (i) understanding and learning, (ii) opportunities, and (iii) control. The ability to develop key cognitive skills such as communication and critical evaluation is fundamental to the fulfilling of autonomous needs, as are the opportunities for social activity that are meaningful and productive in the development of these skills, and the ability to control the circumstances that have direct impacts on the individual’s life. Prior discussions of SC mechanisms have already highlighted the ways in which behaviour is subject to manipulation by SC’s mechanisms of power thus impacting the development of understanding and learning. Opportunities are also limited within the digital context as the manipulation of digital architecture funnels user choices and behaviour toward options most profitable for the surveillance corporation. However, it is at a more fundamental level that we must also consider harms to autonomy within SC, as impediments to the ability to formulate and act on choices are obstructed and interfered with through this system. Marking a shift in zemiological enquiry, algorithmic harms (Malik et al., 2022) highlight the mass diffuse social harms emanating from algorithmic systems. Foregrounding algorithmic bias and the blurring of perceptions of harm, Malik et al.’s analysis serves to recognise autonomy harms as they are emergent in the digital context – as impediments to human autonomous choice. The importance of user autonomy has recently been highlighted, with this forming a disparity between *perceived* autonomy and the capacity for true autonomy within the digital marketplace (Wertenbroch et al., 2020), with the disparity between the two widening in the digital context serving to create a perceived autonomy for consumers. Consolidating

this into understandings of autonomy harms allows for a key development as the notion of perceived autonomy forms a vital mechanism for the continuation of normalized surveillance, fostering the acceptance of surveillance whilst furthering user apathy and reliance on technological convenience.

From this brief analysis, we begin to discover the vital developments needed within harm frameworks to recognise the depth and nuances of Digital Harms. These developments require further consideration and investigation to assimilate changes in modes and structures of power, and to recognise the changing asymmetries of state/corporate relationships. It is here that we begin to witness the need for a distinct approach to harm, one that is informed by the digital context and analyses notions of harm beyond the realm of empiricism.

4.4 Conclusion: Towards Digital Harm

Thus far this chapter has discussed the implications of an SC-informed understanding of digitality for Critical Criminology, drawing upon various perspectives to explore prior work in the field and gaps in knowledge which require deeper consideration. Key areas for development were raised throughout, notably; (i) the need for SC to be recognised and assimilated into understandings of Capitalism, (ii) the need for digital modes and mechanisms of power to be recognised, and (iii) the need for harm to be considered beyond the empirical and social. Having drawn upon works within Critical Criminology, crimes of the powerful, Zemiology, and DC, these key findings constitute the founding pillars on a new theoretical orientation and a new approach to investigating harms within the digital context. Digitality requires a **Digital Zemiology** – a framework founded upon the recognition of digital systems and mechanisms of power and which acknowledges the nuances of harm production in the digital context. However, before the formulation of this new perspective, a few distinctions and justifications are required in order to avoid Digital Zemiology becoming a tautological exercise. Therefore, this section shall

comprise of a series of invitations based upon the previously discussed findings, to lay the foundations upon which a framework can be built and to outline the overarching findings of Part 1 of this thesis.

4.4.1 Surveillance Capitalism as Digitality

As the overarching finding of this analysis, the need to acknowledge and incorporate SC into current frameworks cannot be understated. As a theoretical underpinning, this represents a reorientation of understandings of Capitalism which requires wider research and investigation to understand the implications of. Therefore, a Digital Zemiology must be fundamentally based upon an understanding of Capitalism as digitally-enabled and recognise the uniqueness of the digital context – a contextual distinction which represents a severe point of departure from prior frameworks and justifies the need for a fundamentally digitally informed theoretical position. From the discussions in this chapter, the digital is a unique site of harm production facilitating SC powers – fluid, ubiquitous, and hidden in its approaches, this cannot be interrogated through frameworks that are built upon and investigate the tangible and only the neoliberal. The distinctions which set SC apart from prior conceptualizations of Capitalism have been outlined throughout this chapter and in Chapters 2 and 3 (see pages 34-50 and 60-65) and thus do not need reinstating here, however the importance of this is paramount to developing our understandings of Digital Harm and to the founding of a Digital Zemiology. To recognise SC is an opportunity to develop not only understandings of harm, Capitalism, and corporate power, but an opportunity to embed understandings of technology and digital society into Critical Criminology.

4.4.2 The Role of Digital Technologies

Further to this, there is an urgent need to recognise digital modes and mechanisms of power prevalent through SC and the shift in power relations that this is indicative of. From the physical devices which form the apparatus of ubiquity (Zuboff, 2019a) to the

surveillant assemblage (Haggerty & Ericson, 2000) to the spatialization of control (Koskela, 2000), there are layers of mechanisms which must be approached in a way which incorporate both the hardware and the software of the digital assemblage. As mechanisms of power, this deviates from many prior articulations which serve to focus on a singular form of hardware as indicative of the surveillant assemblage (Lippert, 2009) and requires a broader focus able to conceptualise the assemblage in a way which recognises the many levels at which this operates. The need to shift focus from the social to the Digital demonstrates this power on a deeper level, facing the need to recognise the surpassing of physical boundaries by corporate powers and the internalisation of these mechanisms by users. A primary mechanism in need of greater depth of investigation is that of algorithmic influence – as a mechanisms of power this is under-conceptualised and has little understanding of the ways in which algorithms can produce and reproduce power relations whilst serving to maintain their creditability (Powell, Stratton and Cameron, 2018:106). It is here that the role of digital technologies must be interrogated further. As the highlighting of Wood's work (2021; 2022) has sought to exemplify, understanding human interactions with technologies signifies a key development that is needed. By further engaging with Postphenomenology in Chapters 6 and 7 (see pages 123-128 and 139-151), this thesis can embrace an interdisciplinary approach to Digital Harm.

4.4.3 A Techno-Philosophical Approach to Harm

Perhaps the finding of this analysis which warrants the deepest investigation is the need to examine the hidden, internalized levels at which harm manifests within the digital context and amend approaches to harm in a move away from the strictly tangible toward a deeper understanding of harm. The deeper level at which these harms are seen to materialize concerns **cognition**; further bringing into discussions of harm the recognition of interventions in and obstructions of human identity and autonomy. To develop this is to interrogate the meaning of identity and autonomy within the digital context, exploring the facets of the human experience which are commodified and exploited. This coincides

with the need to take understandings of harm away from those inflicted by strictly human agents to instead bring into focus harm inflicted by the systems and mechanisms of digitality which operate through the surveillant assemblage, decentralized from a singular device, and bypassing human agency and awareness. This requires a focus on the surveillant *assemblage* to avoid the pitfall of focusing on a singular harmful mechanism. This warrants an inherently interdisciplinary approach – as demonstrated by the discussions above, a theory of Digital Zemiology must draw upon works across disciplines as the implications of these harms defy the boundaries of any singular framework.

Conclusion to Part 1

Part 1 of this thesis sought to answer the following research questions:

- 1. To what extent can Critical Criminology speak to the digital context?**
- 2. What are the key theoretical components of Surveillance Capitalism?**
- 3. What are the limitations of Zuboff's Surveillance Capitalism?**
- 4. How, if at all, can these limitations be overcome?**
- 5. What developments are required of current Critical Criminological theory to embed an understanding of 'Digital Harm'?**

RQ1 established key frameworks within Critical Criminology with the capacity to speak to the key pillars of the digital context established in this thesis's introduction; corporate power, state/corporate relationships, and the production of harm. Through this discussion, this found that Critical Criminology allows a more nuanced understanding of these power structures, gaining insight into the role of the corporation in the production of harm, the increasingly complex relationship between the state and transnational corporations, and the forms that harms are seen to take in the social realm.

RQ2 established Zuboff's framework of SC and a foundational understanding of digitality, outlining the modes of extraction enabled through the proliferation of digital technologies. The ideological developments she establishes to distinguish between SC and neoliberal Capitalism were discussed, with this forming an underlying collectivist justification for data collection and an instrumentarian form of power through which this operates. Through Zuboff's work, it becomes clear that the digital context requires a reassessment of modes of extraction and mechanisms of power, emphasising the role of corporate surveillance in capital accumulation and the diminishing of human decision-making in the wake of this.

RQ3 explored the limitations of Zuboff's approach, bringing developments from Surveillance Studies and Marxist perspectives to develop the two main facets of SC individually: surveillance and Capitalism. In doing so, this analysis developed nuanced understandings of the surveillance mechanisms proliferated by this system and situated SC as a developed form of Capitalism which serves to more efficiently accumulate capital. This further addressed the shortfalls of Zuboff's framework: highlighting the necessity of a deeper understanding of human agency in the digital context amid the technological determinism in the work, the overstated novelty of SC as unprecedented and signifying the end of neoliberal Capitalism, and the behaviourism paradox prevalent through the epistemological and ontological assumptions in SC. It became clear from this discussion that, to overcome these limitations as asked by **RQ4**, this thesis needs to more deeply understand the implications of digital technologies for human agency – therefore moving this research towards a richer discussion of human-technology relations.

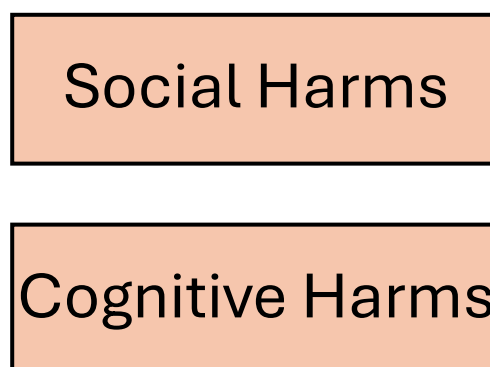


Figure 1: The beginning of a Digital Zemiology framework, acknowledging the distinction between Social Harms and emergent Cognitive Harms

RQ6, however, revealed that for Critical Criminology to speak to digitality, fundamental developments are needed regarding understandings of corporate conduct, the role of technologies, and a recognition of harm production that lies beyond the social empirical realm. Figure 1 forms the beginning of a Digital Zemiology framework, in which the first stage of this research has identified a distinction between the harms of the social realm traditionally explored through Zemiology, and the emergent **Cognitive Harms** that have been identified across Zuboff's work and literature within Surveillance Studies (Brusseau,

2019; 2020). In answering RQ6, therefore, it becomes apparent that of the Critical Criminological perspectives explores, Zemiology possesses the transformative capacity to be developed and embedded within the digital context.

Part 2:

APPLICATIONS

Chapter 5: Methodology

In seeking to construct a rigorous and carefully considered methodology for developing a framework of Digital Harm, it is imperative that space be devoted to the methodological issues and insights identified thus far, and those that are to be further identified in Chapter 6 and 7's theorisation. The hidden influence discussed by Zuboff (2019a; 2019b) and the issues surrounding user awareness discussed in the Preface (see pages xiii-xviii) pose significant methodological barriers to the utilisation of dominant social science methods. This chapter therefore seeks to expand upon these issues and the means to ameliorate them. By utilising abductive analysis (Timmermans & Tavary, 2012) this thesis will employ **theory as method**, implementing a process by which theory generation is refined and renegotiated considering findings within each of the following chapters. An exploratory case study (Yin, 2014) of the ultra-fast fashion industry shall be utilised to assess the applicability of the concepts being formed, returning to the original instance Digital Harm manifested in this research (see pages xiii-xviii).

This chapter will discuss the rationale behind using theory as method for this research, emphasising the necessity of utilising application in the refinement and renegotiation of the key theoretical concepts that have been formulated in this thesis. The process of abductive analysis (Timmermans & Tavary, 2012) and the formulation of Digital Harm concepts as the coding criteria for data analysis are explored; with this forming the basis by which the conceptualisation of Digital Harm can be refined via case study application. A case study rationale shall be justified considering the methodological barriers prevalent in this thesis' subject matter. By exploring the methodological implications of SC (Zuboff, 2019a) and those highlighted in the Preface (see pages xii-xvii), a justification of the case study method is formed. This shall lead into the research design and the process of data collection; with this spanning from March 2021 to September 2024 through the collation of news media and reports from fashion sustainability initiatives concerning the fast and ultra-fast fashion industry.

5.1 Overarching Research Aim

Before discussing the methodology of this research, it is necessary to first revisit the fundamental research question of this thesis:

To understand and assess the applicability and limitations of, and emerging opportunities within, Critical Criminology in addressing Digital Harms.

Thus far this research has determined the Zemiological perspective as holding a transformative capacity in the acknowledgement and conceptualisation of harms emerging in the digital context. In doing so, however, it has become necessary to develop a Digital Zemiology framework to embed this approach within the digital context.

5.2 Methodology

5.2.1 Theory as Method

Throughout this research, attempts have been made to consolidate numerous theoretical frameworks within Critical Criminology with Zuboff's SC (2019a) (see pages 76-95), providing a critical understanding of digitality to form an understanding of Digital Harm. By seeking to engage with disciplines outside of Critical Criminology – notably Surveillance Studies (Haggerty & Ericson, 2000; Lyon, 2002; 2007; Murakami Wood, 2007, see pages 52-59), Postphenomenology (Ihde, 1990; Latour, 1999b; Verbeek, 2011, see pages 123-128), and Digital Materialism (Floridi, 2023; 2024, see pages 140-144) – key concepts comprising Digital Harm will be formed. Chapter 7's formulation of digitally-facilitated and digitally-mediated harm (see pages 155-161) will seek to consolidate Zuboff's articulation of SC with critical understandings of technology, as theoretical developments are made possible through examining the similarities and differences of

these approaches. Utilising theory in this instance allows for an exploratory approach, centred around the generation of theoretical insight.

Therefore, embedded within in this research is the utilisation of **theory as method**. The lengthy process of theoretical engagement which precedes the reader's introduction to this thesis demonstrates a now invisibilised implementation of this (see Preface). Initial attempts to pinpoint an adequate Critical Criminological framework in which to situate Zuboff's SC proved a trial-and-error process – as, whilst numerous overlaps in subject matter were found, limited applicability was found. Whilst a detailed rendition of this process now lies beyond the scope of this thesis, the formative understanding that is provided within Part 1: Explorations was moulded by entrenching this thesis within numerous theoretical positions and evaluating their utility for addressing the implications of SC and digitality. Throughout this process theory has been used as a method of refinement and renegotiation, with the key concepts that were taken from Zuboff's writings providing codes to be identified within these frameworks. These key concepts were refined through Zemiological enquiry; provided a theoretical grounding through which to speak to the loss of individual freedoms Zuboff discusses. However, this also highlighted the need for a renegotiation of the contexts in which Zemiological enquiry is conducted.

The application of Digital Harm concepts to an in-depth case study furthers the scale at which theory may be used as method. By adopting an interdisciplinary approach to formulate key concepts of Digital Harm, this presents the initial points from which to analyse a digital context-specific case study enabling a process of refinement and renegotiation to take place. The case study therefore provides an opportunity to 'test out' the validity of Digital Harm as a framework. In doing so, these concepts may be refined through their operationalization and developed toward a framework of Digital Zemiology.

5.2.2 Abductive Analysis

This thesis utilises abductive analysis (Timmermans & Tavory, 2012; 2014; 2022) as a means of theory generation through an interdisciplinary formulation of Digital Harm, followed by an application of Digital Harm concepts to the ultra-fast fashion case study. Abductive analysis builds upon the concept of abduction as formulated by pragmatist Charles S. Pierce, in which abduction is ‘a central concept in his theory of logic and inference that denotes the creative production of hypotheses based on surprising evidence’ (Timmermans & Tavory, 2012:168). As a qualitative data analysis approach, abductive analysis is aimed toward theory generation, resting on ‘the cultivation of anomalous and surprising empirical findings against a background of multiple existing sociological theories and through systematic methodological analysis’ (Timmermans & Tavory, 2012:169).

Abductive analysis was chosen for this research due to the previously explored inability to consolidate SC with existing Critical Criminological theories (see Chapter 4, pages 78-98). From the beginning, this research has been entrenched in numerous Critical Criminological theoretical positions, developing an in-depth understanding and further seeking to embrace alternative disciplines through Surveillance Studies, Postphenomenology, and Digital Materialism. This approach lends itself to abductive analysis as, in the words of Timmermans and Tavory, ‘abduction assumes extensive familiarity with existing theories at the outset and throughout every research step’ (2012:173) with an in-depth knowledge of numerous theoretical positions being ‘necessary both to find out what is missing or anomalous in an area of study and to stimulate insights about innovative or original theoretical contributions’ (2012:173).

This method of data analysis draws on the researcher’s own positionality and situated knowledge, providing a further strength to the analysis in the context of my own experiences of the Digital and my background in researching the fast fashion industry (see pages xiii-xviii), including the ways in which my situated knowledge of the industry has developed throughout this research project. A researcher’s positionality within

abductive analysis ‘provides a way to conceive of abduction as socially located, positional knowledge that can be deepened and marshalled for theory construction...wherein much is made of the fact that the researcher is part of the world of the people studied’ (Timmermans & Tavory, 2012:172). Recognising the researcher as part of the world being studied serves to embrace the situated knowledge inherent at the beginning of this research project, whilst the method of abductive analysis negates potential assumptions that could be drawn from this knowledge.

Implementing abductive analysis involves three stages; (i) revisiting the phenomena, (ii) defamiliarization, and (iii) alternative casing (Timmermans & Tavory, 2012). As the first stage, revisiting the phenomena denotes a retreading of data to allow observations to continue to unfold. Rejecting the assumption that perception and observations are a ‘one-time experience’ (2012:176), revisiting the phenomena allows for the reexperience of observations, and for observations to be reexperienced in different ways. Timmermans and Tavory (2014) emphasise the benefit of detailed fieldnotes in facilitating this process, ensuring that ‘we thoroughly familiarize ourselves with our observations’ (2014:53) to avoid observations being underpinned by preconceived impressions and expectations. In the context of this research, the numerous iterations of the fast fashion case study form the revisiting of the phenomena over a period of four years with data collection continuing and being recontextualized throughout this. Whilst fieldnotes were not kept during this period, the retreading of the fast fashion territory ensured familiarization with the observations being made and the reexperience of observations.

The second stage of defamiliarization denotes an examining of the layers of assumptions underpinning the matter of study. In this way, ‘defamiliarization takes an object that has all but ceased to offer resistance and problematizes its signification, turning it into a problem that requires a creative solution’ (Timmermans & Tavory, 2014:56). In doing so, estranging the familiar elements of the object being studied and confronting experience as unfamiliar to embrace surprising findings. Giving attention to the elements of the research subject matter that often lie at the background of our experience, those elements which are ‘too taken for granted to be given second thought (Timmermans &

Tavory, 2012:177), new focal points of observation manifest. Defamiliarization forms a key component of this case study; the presence of the fast fashion industry is often an unquestioned one, too taken for granted as a natural occurrence to warrant critical attention. By estranging the familiar elements of the fast fashion industry, surprising observations manifest that would otherwise be overlooked.

Finally, alternative casing requires the revisiting of observations considering various theoretical insights. Constantly comparing observations from the data with in-depth theoretical knowledge allows for the development of theory, allowing the researcher to ‘compare new data excerpts with concepts under development to examine cases that could be expected to conform to the emergent theory and determine whether the theory explains their variation’ (Timmermans & Tavory, 2012:178). Alternative casing therefore denotes a back-and-forth process between theory and data, allowing for overlaps and deviations to be observed in theoretical knowledge and developments made. In the context of this thesis, this process has been in place since the beginning. From an original starting point of the fast fashion industry, the observations made throughout the research journey have been compared with knowledge of SC (Zuboff, 2019a), corporate crime (Tombs & Whyte, 2015; 2020), state-corporate crime (Michalowski & Kramer, 1987; 2007), and Social Harm (Hillyard & Tombs, 2004; Pemberton, 2016), before engaging with disciplines outside of Critical Criminology and developing into a conceptualisation of Digital Harm. This continues throughout Chapters 6 and 7, as applicability of each of these perspectives is highlighted as the case study progresses in Chapter 8.

As this three stage process highlights, abductive analysis is a ‘recursive process of double-fitting data and theories’ (Timmermans & Tavory, 2012:179) in which changing contexts and dimensions are identified through the pushing of data against existing theories. Identifying anomalies through this process leads to the development of new theory, and the continuation of the abductive analysis cycle. In this way, abductive analysis gives grounding to the process of refinement and renegotiation, and invites a continuation of this process after a theory of Digital Harm has been formalized within this thesis.

5.2.3 Epistemology

This thesis has thus far engaged with a vast variety of disciplines and theoretical perspectives, each equipped with different epistemological assumptions embedded in their approaches. At the centre of epistemological discussions lies the dichotomy between technological determinism within SC and social constructivism within Postphenomenological frameworks to be discussed in Chapter 6 (see pages 123-128). Chapter 6's forthcoming discussion of Postphenomenology makes this dichotomy clear, approaches such as Extension Theory (Steinert, 2016) and Actor-Network Theory (Latour, 1999a; 2005) are laden with the social construction of technology (SCOT) in which human behaviour is seen to shape technology (Pinch & Bijker, 1987; Klein & Kleinman, 2002). In opposition to SCOT is Zuboff's SC and its claim that digital technologies wield unprecedented influence in the shaping of human behaviour. With the discussion having formed an impasse of deterministic approaches, it is necessary to construct an epistemological approach that is able to bypass issues of determinism whilst also avoiding socio-technical conflation by acknowledging the mutually constitutive dynamics of the social and the digital.

At the core of this thesis is the exploration of (i) the digital context and (ii) the implications of this for human agency and autonomy. In utilising the case study to identify and explain the elements of the digital ontological reality that must therefore exist for the impacts of the ultra-fast fashion context to occur, the epistemological objective is to clarify the relationships between the observable events within ultra-fast fashion and the mechanisms which make this possible. It is these underlying causal mechanisms that the case study seeks to clarify and utilise to generate theory. Through utilising a case study method, causal mechanisms can be abducted from the empirical manifestations captured in the case study and the emergent phenomena explained through a theory generation of the underlying causal mechanisms.

5.3 Case Study Rationale

The methodological barriers prevalent within the subject matter of this thesis have been discussed throughout the chapters thus far, however the implications of this for an application of Digital Harm are important to make clear. Chapter 3 emphasised the methodological difficulties that stem from Zuboff's conceptualisation of SC (see page 72); in seeking to address the hidden influence of algorithmic structures and the often-unconscious impacts of this we arrive at an inability to utilise research methods most prevalent in social sciences. Dominant forms of both qualitative and quantitative methodologies require conscious experience and articulation from participants, with data being garnered from the lived experiences of participants relaying the impacts of a given social phenomenon. However, this thesis has thus far established an understanding of digitality in which the intervention in and obstruction of user awareness, agency, and autonomy are commonplace within the digital system, therefore presenting methodological barriers and questioning the efficacy of dominant methods. In seeking to develop an understanding of Digital Harm that goes beyond the realm of the social, investigating the intangible and invisibilised impacts of digitality limits the methodological options that are available in the current research context of this thesis.

This does, however, provide an opportunity to return to the original subject matter of this research and the context in which Digital Harm first began its formulation – the ultra-fast fashion industry. The Preface of this thesis (see page xiii-xviii) explored the numerous barriers that manifested during the initial fieldwork of this research. Beyond the familiar issues with participant recruitment and attrition that are prevalent within social research, the situated knowledge of each participant – and how this changed during their time with the study – produced barriers to completion. The initial enthusiasm for a study about clothing consumption was replaced by feelings of anxiety in the wake of the surveillance at the root of the research. It proved difficult to instil in participants knowledge of this surveillance system, posing unanswerable questions as to the internal validity of what results may have been produced.

However, this does not negate the appropriateness of the ultra-fast fashion industry as a context through which to refine and renegotiate a framework of Digital Harm. Through the data being gathered to form an initial literature review and critical context of the ultra-fast fashion industry, a case study method began to form, providing an opportunity to utilise Digital Harm's preliminary manifestation as a continuing site of analysis. In this way, the case study becomes a solution to the methodological issues inherent in researching SC and the impacts of digitality. Constructing a formative case study presents further opportunities to continue the process of refinement and renegotiation in different contexts and reserves the ability for this to be furthered again through alternative methods. The case study method therefore offers the opportunity to situate Digital Harm's development within a continuing context, whilst the method by which this is researched has changed throughout the project.

However, in the context of theory generation, the case study method possesses shortfalls. Merton (1967) argues that case studies are not suited to generating grand abstract theories but should instead be used to generate minor or middle-range theories. Middle-range theories are described as those 'that lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behaviour, social organization and social change' (Merton, 1967:39). In seeking to generate a theory of Digital Harm that speaks to the ontological reality of digitality, Merton's words at first seem to pose issues for utilising the case study to generate such a unified theory. Whilst initially reading as dissuading the use of case studies for grand theory generation, this alternatively presents further opportunities to allow the continued development of a Digital Zemiology. As has been emphasised previously (see page 72), the task in conceptualising Digital Harm is also a theoretical one requiring further operationalization beyond the scope of this thesis to aid its refinement (see pages 105-107). Therefore, the limited generalisability of this case study must be recognised, and the need for further exploration of this in future work.

5.4 Research Design

This section shall make clear the research design that is utilised to further the use of theory as method. As has been highlighted above, the application of key theoretical concepts that have been developed thus far serves to provide the opportunity to ascertain the robustness of these concepts to a real-world, digital context. To implement this, a robust research design is needed. Therefore, this section shall detail (i) the exploratory case study method, (ii) the data collection process, (iii) data analysis, and (iv) barriers to analysis.

5.4.1 Method

Chapter 8 comprises an exploratory case study (Yin, 1998; 2014) documentary analysis. Yin (1998) highlights the exploratory case study as being suitable where available literature or existing knowledge of an area of study is poor, in which conceptual frameworks have not been enlightening, and where theoretical propositions can be made. Further to this, Yin (2014) states that the exploratory case study is conducted with the intention of exploring and identifying further questions for future research. As has been emphasised previously (see pages xiii-xviii), academic literature critically discussing the fast and ultra-fast fashion industry is scarce, necessitating an exploratory approach to this subject matter. Furthermore, in seeking to critically approach SC, prior theoretical frameworks have proven insufficient (see Chapter 4, pages 76-95). As the aim of this case study is to generate theory, the forming of further research questions serves to produce opportunities for future research.

The case study forms a documentary analysis; this was deemed the most appropriate form of case study due to the global context in which the ultra-fast fashion industry is situated and operates. To speak to the numerous aspects of the industry, it was imperative that data be collected that reflected the full breadth of the industry. The use of documentary analysis enabled the case study materials to be revisited over time and

further findings uncovered. The beginnings of the case study were initially a literature review, forming a context establishing chapter for this thesis before the turn toward digitality that SC, and the digital schism in the fast fashion industry (see page xiii), necessitated. This initial form lent itself to the documentary case study method as it allowed for the materials utilised to be revisited and analysed as data. Further documentary data was then able to be gathered in-keeping with the exploratory case study method. Utilising this method allowed for a data collection period that spanned over three years; enabling a greater depth of data to be gathered and for the developments within the industry to be captured throughout this period.

The purpose of this case study is to explore the emergent digital harms that manifest within the ultra-fast fashion case study. To achieve this, it was imperative that the documents gathered for analysis retain their relevance. The case study utilises news media, reports from sustainability initiatives, statements and consumer-facing information from fast- and ultra-fast fashion corporations, and academic journals. To maintain relevance, news media, reports, and corporate statements were deemed relevant if published since the year 2000. As the fast and ultra-fast fashion business model developments have predominantly taken place from this period, documents published before this time were considered outdated for the current discussion. Due to the lack of critical academic attention toward the fast and ultra-fast fashion industry, a broader scope was used to determine relevance. Articles were deemed relevant through their applicability to the case study construction; with this primarily concerning articles pertaining to developments in marketing and the environmental impact of the industry.

As this is a subject matter that has not garnered much critical attention within Critical Criminology (see Elias, 2024; Simončič, 2021), contextual information is also required to construct an understanding of the industry prior to the development of ultra-fast fashion. This was done utilising literature from within business and economics disciplines to understand the key pillars of the fast fashion business model. As the case study materials were initially collected as part of a prior literature review, academic articles were searched for using the terms 'fast fashion' and 'garment industry'. Following the

development of this into a case study, search terms were expanded to increase breadth and depth of data. Data was collected using a snowballing of search terms; initial searches used 'fast fashion' as the operative phrase, with this spanning to include 'workers', 'workers rights', 'environmental impact', and 'consumer impact', before focusing on specific brands. The same process was later utilised for 'ultra-fast fashion'. Results pertaining to luxury fashion, or high-end fashion, were not included in the analysis due to sector differences. However luxury fashion represents a further facet of the garment industry in need of investigation, as luxury manufacturing practices increasingly follow the fast-fashion model (Kent, 2024; Rauturier, 2023).

5.4.2 Data Collection

The data collection period for this case study took place from March 2021 until September 2024. The data was collected from a variety of sources; due to the scarcity of academic literature pertaining to the fast fashion industry, news media sources and reports published by fashion sustainability initiatives were predominantly used to construct the case study. Further to this, numerous documentary films were also utilised. The news sources used are predominantly The Guardian, The Independent, and BBC, as well as fashion specific publications such as Business of Fashion, Vogue, Teen Vogue, Harper's Bazaar, and Glamour. Fashion sustainability initiatives such as Clean Clothes Campaign, Fashion Revolution, Global Fashion Agenda, Labour Behind the Labour, Fashion For Good, and Good On You were also utilised as research producers about the fast fashion industry. These sources were utilised to improve 'quality' (Guba and Lincoln, 1994) and 'trustworthiness' (Bryman, 2008) of data, towards a critical reflection of the fast fashion industry. Where academic sources are utilised, these predominantly stem from business and economics disciplines, with fashion journals and research within the environmental and biological sciences being utilised where possible. Data collection consisted of using key search terms, which then developed based on data previously collected. For example, searches for 'fast fashion' and 'ultra-fast fashion' produced numerous news articles pertaining to certain brands, 'microtrends',

‘overconsumption’, and social media influence. These then provided further search terms to be used to offer in-depth understanding.

5.4.3 Data Analysis – Broad Theme and Focused Coding

Abductive analysis’ conceptualisation of focused coding (Timmermans & Tavory, 2022) is used for data analysis. Focused coding ‘first identifies a broad theme and then seeks to deepen it while coding for variations among excerpts’ (Timmermans & Tavory, 2022:92). From Part 1 of this thesis, the broad theme of ‘digital harm’ has been established through the work of Zuboff, digitality (Hassan, 2020; Negroponte, 1995), Surveillance Studies (Brusseau, 2019; 2020; Haggerty & Ericson, 2020; Murakami Wood, 2007), and Zemiological literature (Pemberton, 2016). This theme will then be deepened throughout Chapters 6 and 7, as this research seeks to explore Critical Criminology’s engagement with technology harms and further with Postphenomenology (Ihde, 1990) to advance this – moving towards a critical understanding of digital technologies.

Chapter 6 comprises the beginning of this process; through exploring Critical Criminology’s engagement with digital technologies and their role in harm production and mitigation, gaps in literature and understanding will be highlighted. This is furthered through an engagement with Postphenomenology (Ihde, 1990) and how this has been utilised within studies of technology harms (Wood, 2022; Wood et al., 2023). From this, key concepts are identified that advance this analysis toward a conceptualisation of Digital Harm. Chapter 7 seeks to develop this understanding by drawing distinctions between the technological and the digital, exploring the implications of this for human-digital relations. By utilising the concepts within Postphenomenology, focused codes are actualised by embedding this within an understanding digitality and SC. Focused codes are formulated in the conclusion of Chapter 7 (see page 160).

5.4.4 Barriers to Analysis

Despite the measures taken to strengthen the rigor of this analysis, barriers persist in the evidencing of integral arguments. The data collection section discussed the materials that were used in constructing the case study, however whilst critical insight is scarce within academic literature there are further issues concerning the available information on corporate practices in the fast and ultra-fast fashion industry. This is of particular concern when discussing the environmental impacts and concerns for workers' welfare within the ultra-fast fashion industry specifically, as little to no information is made publicly available concerning the manufacturing practices of this facet of the industry. Whilst fast fashion is subject to an industry-wide lack of transparency, the historical legacy of fast fashion has produced a plethora of research from fashion sustainability initiatives charting harmful corporate practices. However, given the relative infancy of ultra-fast fashion in comparison, there is less information available specifically centred on the new wave of clothing corporations.

Further to this, barriers persist in the evidencing of harms that lie beyond the evidencable social realm. This echoes the concerns raised previously in this thesis (see pages 72-75). Whilst evidencing internal harms stemming from hidden influence and the manipulation of agency lies beyond the scope of this thesis, this does present opportunities for future research to continue the work that this thesis begins.

5.5 Ethical Dimensions

Whilst not raising ethical concerns through its methodology or method, this thesis nonetheless possesses ethical dimensions. In researching digitalization and consumption, this analysis raises moral and political questions surrounding the fast and ultra-fast fashion industry, consumption practices, and digital technology use. Whilst it is not the intention of this research to moralise either fast/ultra-fast fashion clothing

consumption nor heavy digital technology usage, it does intend to critically engage with these practices, their normalization, and their implications. It is not the perspective of this research that users of digital technologies nor consumers of fast/ultra-fast fashion clothing are to be scrutinised for the consumption practices they partake in but instead seeks to explore the processes of normalization behind this and the production of harm this facilitates.

However, this does engage more deeply with the moral and political actions of corporate entities. Bringing into question the proliferation of digital technologies through which harm production can be evidenced, and having previously acknowledged the intentionality with which this is done (see page 152), the ethical issues being raised through this thesis centre around the actions of corporate entities. This is furthered in the fast and ultra-fast fashion case study, as the social and cognitive harms identified through this once again speak to the intentionality prevalent within these practices. The political dimensions of this returns us to discussions in Chapter 4 and the state/corporate relationship (see pages 78-83), emphasising the geo-political and socio-political landscapes within which corporate activities occur. The profit generation motive behind digital technologies further raises moral questions concerning breaches of data privacy and the commodification of personal data – dimensions which Zuboff's *'The Age of Surveillance Capitalism'* (2019a) heavily criticises. Whilst this moral dimension shall be expanded further throughout the remaining chapters of this thesis, bringing to light these ethical dimensions enables the moral ambiguity with which corporations act to shift – as 'digital good' becomes 'digital bad'.

Chapter 6: Understanding Technology Harms: Articulations from within Critical Criminology

To pursue the Digital Zemiology line of enquiry, it becomes necessary to firstly interrogate the ways in which human-technology relations have been previously conceptualised within Critical Criminology. Critical Criminology has a long history of engagement with analysis of technology utilisation; albeit it predominantly within the realms of facilitating criminal acts, the increasing prevalence of technology in policing practices, and incarceration technologies. The ways in which these areas have been discussed provides an insight into Critical Criminology's understandings of technology and the role this plays in the enacting of harm. The research questions of the chapter are as follows:

RQ1) How has Critical Criminology previously engaged with harmful human-technology relations?

RQ2) How has Postphenomenology been utilised in conceptualisations of harm?

This chapter will therefore seek to explore Critical Criminology's relationship to technology, beginning firstly with a brief recognition of works discussing the technology-crime nexus – encompassing technology-facilitated violence (Henry & Powell, 2018; Mitchell et al., 2022), predictive policing (Sandhu & Fussey, 2021; Williams & Clarke, 2016; 2018), incarceration technologies (Kaun & Stiernstedt, 2019; McKay, 2018a; 2018b, 2020), and technocrimes and artificial intelligence crimes (AIC) (Hayward & Maas, 2021) – before exploring the discipline's engagement with Postphenomonology (Ihde, 1990; Verbeek, 2011) to conceptualise the ways in which technologies are able to not only

facilitate harmful actions but further to influence human experiences and behaviours (Wood, 2021; 2022; Wood et al., 2023).

This exploration will speak to the third and fourth findings of **Part 1: Explorations** (see pages 96-98). By considering the ways in which Critical Criminology has engaged with technology and further interrogating human-technology relations, this will lay the foundations for embedding the digital into notions of harm. In seeking to consider harm at the level of cognition, an engagement with Postphenomenology to analyse human-technology relations provides a point of entry into the ontological implications of the digital sought to be explored in this thesis.

6.1 The Technology-Crime Nexus

‘However, the ankle bracelet does not monitor the prisoner; the criminal justice system does that.’

(Zuboff, 2019a:224)

Critical Criminology’s engagement with technology comprises research examining the nexus between crime, harm, and technologies. Expanding the parameters prescribed within Cyber Criminology (Jaishankar, 2018), the likes of Computation Criminology (Williams & Burnap, 2016), and Criminology of the Internet of Things (Milivojevic & Radulski, 2020), and the previously discussed Digital Criminology (Powell et al., 2018), each represent the turn towards technology. These works are unified by their centring of technology as a point of Critical Criminological enquiry; be that through the exploration of technology-facilitated violence (Henry & Powell, 2018), technology’s prevalence within policing practices (Sandhu & Fussey, 2021; Williams & Clarke, 2016; 2018), technologies of incarceration (Kaun & Stiernstedt, 2020; McKay, 2022), ‘technocrimes’ (Steinmetz & Nobles, 2017; Steinmetz, 2022), or the more emergent criminal uses and actions of Artificial Intelligence (AI) technologies (Hayward & Maas, 2021). This section shall provide

a brief overview of the Critical Criminological literature pertaining to technology, exploring the ways in which this has engaged with issues arising from increasing technologization, and the uses of technology both as a facilitator of- and protector from- violence and harm.

Perhaps most prevalent within Critical Criminology's engagement with technologization is the utilisation of this for enacting violence. Technology-facilitated violence finds itself at the forefront of technology/criminology enquiry, as the discipline seeks to understand the ways in which technologies provide, invite, and enable actions of harm and violence. Gender-based domestic and sexual violence (Henry & Powell, 2018; Henry, Flynn, & Powell, 2020; Patel & Roesch, 2022), image-based sexual abuse (Flynn & Henry, 2021; Rackley, et al., 2021; Powell & Henry, 2017; Powell, et al., 2024; Thompson & Wood, 2018), digital coercive control (Harris & Woodlock, 2018), technology-facilitated coercive control (Dragiewicz et al., 2018), digitally-facilitated child sexual exploitation (Mitchell et al., 2011), and digitally-facilitated human trafficking (Giommoni & Ikwu, 2021; Latonero et al., 2012) have formed some of the dominant contexts within which technology-facilitated violence is researched. Within each of these contexts, we predominantly see a framing of technology as a means to harmful action utilised by a human actor, largely to exact pre-existing harmful intentions. This assumptive human-technology relation is not prescribed by the 'technology-facilitated violence' term itself but is endemic within Critical Criminological explorations of this (Mitchell et al., 2022). Further to this, the mode of 'technology' remains broad whilst the manifestation of 'harm' and 'violence' takes specific forms (Mitchell et al., 2022) – this harm-focused specificity to the comparative neglect of the technological apparatus maintains a mystification of the varying roles different technologies may play in the enacting of harm and violence. Situating technological apparatuses within a wider context of violent and harmful human relationships avoids interrogating the role that technological capabilities may have in the formulation of harmful ideation. Therefore, a greater understanding is needed of the mechanisms through which technological capabilities manifest and operate to better articulate their facilitatory implications.

Discussions of technology-enhanced policing practices similarly suffer from this technological opacity. Predictive policing (Sandhu & Fussey, 2021) refers to the strategic use of data and algorithmic technologies to inform policing practice – directing its human actors toward locations and communities to police (Sandhu & Fussey, 2021). The technologies within this context operate similarly to those outlined within Zuboff's (2019a) work; the scraping of personal data to enable behaviour prediction. The automating of police decision-making has been heralded as widely beneficial for the practice of policing, facilitating early prevention, and mitigating avoidable harms (McGuire, 2020). This shift from personal discretion to algorithmic instruction appears to promise solutions to policing in the wake of austerity, however very little is understood regarding the implications of this technology for policing, the experience of using these technologies, and the continued prevalence of harm production through their utilisation. What we find in the wake of predictive policing is the pervasiveness of biased decision-making, albeit this time technologically reinforced. Williams and Clarke (2016;2018) draw our attention to the reinforcement of racial inequality through technology-informed policing practices – notably the Trident Police Gangs Matrix in London. Such databases categorise based on *perceived* threat of offending, with this being determined by innocuous and opaque factors which leave many vulnerable to over-policing and otherization based on race and racialisation (Williams, 2015). Such policing technologies, whilst heralded as cost-saving and efficiency-boosting instead serve to reinforce social inequalities and the over-policing of Black and minority ethnic communities – with institutional racism not only manifesting through individual discretion but furthered through predictive biases. Williams and Clarke (2016; 2018) seek to centre the voices of those who face otherization at the hands of such technologies to better understand the harms resulting from these practices, however this has yet to be the dominant focus within discussions of predictive policing.

A further arena of critical engagement is that surrounding technologies of incarceration – the development of the 'smart', automated, and digital prison (McKay, 2022) has similarly been heralded as the answer to unstable prison environments, with prospects to increase safety and efficacy in the realm of rehabilitation practices. The 'smart prison'

makes two promises: (i) technologies that benefit prison authorities via heightened security and surveillance (Kaun and Stiernstedt 2020) and (ii) technologies that may directly benefit people in prison and their rehabilitation while also indirectly benefiting prison management (Jewkes and Reisdorf, 2016; Knight and Van De Steene, 2017; McKay 2018a). Furthering the efficiency arguments seen in technologically-mediated policing practice following austerity measures, heightened security and surveillance are aimed toward a safer and more cost-effective prison environment by reducing the need for prison officer/inhabitant physical interaction (McKay, 2022). The heightened ability to track and analyse inhabitants' behaviours, paired with a furthered capacity to control the prison environment and the promise of security and predictability, mirrors the behavioural modification tactics highlighted in Zuboff's work (2019a). In contrast, the integration of technologies which seek to benefit the incarcerated individual offer opportunities to remain connected to the outside world. The use of digital devices for audio and audiovisual communication with relatives, legal aid, education, and reintegration and rehabilitation services seeks to provide prisoners with opportunities to maintain family connections whilst also seeking positive opportunities (McKay, 2016; 2020).

A further emphasis is allowing prisoners to develop digital literacy using personal digital devices, ensuring that, upon release, digital exclusion is mitigated (McKay, 2022) and raising discussions regarding prisoners' rights to digital devices (McKay 2018a, 2018b). Reisdorf and DeCook (2022) raise this point further, emphasising that the lack of information communication technologies (ICTs) within prison environments negatively impacts prisoner reintegration upon release, calling for increased access to internet technologies, ICTs, and digital literacy training as part of rehabilitation programs. However, the utopian vision of a digitally-enabled safer prison environment has been heavily critiqued, with issues around data privacy, increased surveillance, and civil rights instead warranting a dystopian vision of control (Kaun & Stiernstedt, 2019). What we witness in the datafication of human behaviour in Zuboff's work (2019a) is prediction based on historical behaviour, a serious contradiction for the integration of digital devices into rehabilitation practices which aim to focus on positive change and future action

(Kaun & Stiernstedt, 2019:19). The further offloading of practitioner decision-making to automated systems conjures visions of a de-professionalised and dehumanised automated prison (Kaun & Stiernstedt, 2019:19) – raising serious concerns of a totalising digital prison system amid technocracy (McKay, 2022).

Amongst the criminal justice and violence focused literature is a growing body of research into ‘technocrimes’ (Steinmetz and Nobles, 2017). Issues arise in the study of technocrimes not only for the methodological reasons of technological obfuscation of harmful behaviours conducted using technology, but further due to the seemingly impossible task of maintaining a theoretical perspective able to reflect technological capabilities that advance rapidly. Stepping away from the dominance of the *cyber-* prefix often utilised, technocrime lends its name from the work of Leman-Langlois (2013) who states:

‘Technocrime does not exist. It is a figment of our imaginations. It is simply a convenient way to refer to a set of concepts, practices, frames and knowledges shaping the ways in which we understand matters having to do with the impact of technology on crime, criminals and our reactions to crime – and vice versa: since crime, criminals and reactions also transform technology.’

(Leman-Langlois, 2013:1)

In this way, technocrime is just as much about reactions to crime and criminals as it is about crime and criminals themselves – rejecting the air of objectivity terms such as ‘cybercrime’ prescribe. Technocrime has therefore come to encompass a range of activities and reactions at the intersection of criminality and technology, such as illicit trade via the dark web (Aldridge, 2019; Kruithof et al., 2016) and criminal uses of AI (Hayward & Maas, 2021; King et al., 2020).

Unsurprisingly, where we see an urgency for development is at the intersection of criminality and AI capabilities. Hayward and Maas (2021) conceptualise this in three ways: (i) crimes with AI, in which AI is a tool for criminality, (ii) crimes on AI, in which AI

serves as an attack surface for criminality, and (iii) crimes by AI, in which AI technologies are an intermediary for criminality. As a tool for criminality, AI poses increased capabilities in hacking and fraudulent activities through technologies as well as furthering instances of gendered technology-facilitated violence highlighted previously. In this way, AI has the capability to not only further existing crimes but also produce new instances of criminal behaviour. Attention is drawn to the prevalence of ‘DeepFakes’ and the capabilities for manipulation, misinformation, and defamation that arises from this (De Ruiter, 2021). AI as an attack surface, however, denotes instances in which AI technologies can be hacked or manipulated (Hayward & Maas, 2021:216). Examples given are the feeding of extreme right-wing material into AI chatbots, altering the materials from which machine learning is generated and embedding these messages into future outputs (Gershgorin, 2016 via Hayward & Maas, 2021:216). The use of AI to reverse-engineer such outcomes has serious implications for the precarity of machine learning technologies and the ability for these to be manipulated, even in instances where perpetrators do not have access to the programming code. Shifting the agentic focus, crimes *by* AI speaks to instances in which an AI technology commits wrongdoing independent of human action. Hayward and Maas (2021) provide the example of a shopping bot created in 2015 being released to the dark web, where it eventually purchased illicit drugs and drew the attention of Swiss authorities (Kasperkevic, 2015 via Hayward & Maas, 2021:217). Further instances arise in the context of algorithmic market manipulation, price fixing, and collusion (King et al., 2020: 9-12). This raises questions as to the legal status of AI technologies, the accountability of those who create them, and the need for policy development and regulation to reflect this (King et al., 2020).

What we find within this body of work is a range of ways in which Critical Criminology has engaged with technology, with different ontological underpinnings regarding human and technology agency. Dominant within this is the assumption of human control over technologies, focusing on the human agency to utilise technological artefacts to actualise harmful intent. Be this in the form of technology-facilitated violence, policing practice, or incarceration, technologies are predominantly discussed in a way that **assumes human control and technological neutrality** – wherein technologies are tools

furthering criminality and harm through individual actors or state actors and institutions. Where technological determinism is addressed, in the realm of predictive policing, little is known of the effects of this on human action. The conceptualisation of technocrime and formulations of the AIC typology offer avenues for critical engagement as to the role of technology in producing harmful events, however this requires a deeper consideration of human-technology relations before this can be taken further. ****BP4 ONLIFE**** Amid opaque technological systems, understanding the ways in which technological causal agency effects and influences human behaviour and existence is necessary before Digital Harm can be explored.

6.2 Technological-Facilitation and Mediation: Utilising Postphenomenology for Zemiological Enquiry

From the literature discussed above examining the increasing role technology plays in the achieving of criminal or harmful ends, frameworks have emerged which conceptualise the role that technologies play in the formulation and execution of harmful means to achieve such outcomes. Discussions of human-technology relations signify a turn within Critical Criminology toward utilising Postphenomenology (Ihde, 1990) to understand the facilitatory role technologies play in the exacting of harmful events. This section shall provide an overview of the Postphenomenological frameworks utilised in the understanding of technological-mediation and -facilitation of harmful ends; with these including extension theory (Steinert, 2016), affordance theory (Gibson, 1979/2014), and actor-network theory (Latour, 1999a; 2005), as well as returning to the developments put forward by Wood (2021; 2022) and Wood et al. (2023) consisting of ambient harms, alterity harms, exclusion harms, interface harms, harm translation and zemiosis. Whilst the prior section necessitated a step back from Zemiology to explore current works within Critical Criminology incorporating the role of technology, Wood's work denotes a distinctly zemiological turn in the understanding of human-technology relations and thus will form the backbone of this discussion. As highlighted by Wood et al. (2023) the

potential of a Postphenomenological approach to understanding harm has rarely been utilised within Critical Criminology and Zemiology. As stated, ‘while the existing literature has focused primarily on technology’s ability to express and extend the capabilities of individuals who perpetrate violence, it has not thoroughly addressed *technology’s ability to shape perpetrators’ perceptions, experiences and actions*’ (Wood et al., 2023:1385 emphasis added). Such a utilisation here signifies an important development for understanding of the role of technology in harm production.

6.2.1 Foundations of Postphenomenology

Stemming from the work of Ihde (1990), Postphenomenology seeks to examine human-technology relations and their impact on human behaviour, experience, and existence (Verbeek, 2011). In stepping outside of classical Phenomenology, this reconstitutes technology as ‘part of the lifeworld rather than a threat itself’ (Verbeek, 2011:14) and allows for the recognition of human-technology *relations* as opposed to maintaining a human-technology dichotomy in which the two are approached as entirely separate entities. Postphenomenology sees the recognition of this entanglement of humans and technology as central to understanding the relations between humans and reality. In this way, human-reality relations cannot be understood as pre-existing subjects acting upon pre-existing objects as these are mutually co-constituted (Verbeek, 2005) into ‘interpreted reality’ and ‘situated subject’ (Verbeek, 2011:15). It is this entanglement of humans and technology, and the impossibility of separating the two entities, that becomes central to understandings of technologically-facilitated and -mediated harms.

Firstly, to differentiate what is meant by technological-facilitation versus technological-mediation. Technological-facilitation refers to the ways in which technology furthers the causal powers of human actors (Steinert, 2016). In this way, technologically-facilitated harm can be understood as ‘acts of harm that are brought about when technical artefacts, through making a harmful end easier or possible to achieve, invite actors holding this end to actualize it using the artefact’ (Mitchell et al. 2022: 15). In contrast to

this, technological-mediation refers to the causal powers of technology in the shaping and influencing of human behaviour and experience (Verbeek, 2011), with this translating to zemiological enquiry as the causal powers of technology to amplify harm. From these definitions, the critique given by Wood et al. (2023) is evidenced – highlighting the facilitatory focus embedded in prior Critical Criminological approaches to analysing human-technology relations. With this being to the comparative neglect of the causal, mediatory powers of technology.

6.2.2 Theories of Human-Technology Relations and Agency

Central to this focus is a utilisation of extension theory (Steinert, 2016); in which technology furthers the causal powers of a human actor and serves as an amplifier of harms. Extension theory posits that technological-facilitation makes harmful ends easier to actualise through extending an actor's causal reach (Mitchell et al., 2022); with this being the implicit stance taken within Critical Criminological literature pertaining to technology harms and violence. The focus lies with a human actor, already pursuing harmful action, who utilises technology to do so. This framing of human-technology relations is evident in the literature discussed in the previous section, as well as within literature discussing targeting online fraud and scams (Cross, et al., 2023; Lazarus, et al., 2023). This approach mitigates technology's agency by disregarding the influence technologies have over human behaviour (Wood et al., 2023) thus ignoring the mediating effects of technology (Steinert, 2016; Verbeek, 2011) and becoming susceptible to constructing an analysis of harmful action vulnerable to social determinism. Perhaps unsurprisingly, extension theories cannot account for the hidden influence that this thesis seeks to investigate and conceptualise. As Wood et al. (2023) succinctly state, within this approach 'it is only ever the human user who acts upon technologies; technologies never act upon humans in any way' (2023:1388). Further to this, the utilisation of extension theory maintains an event focus regarding instances of harm and further obfuscates the processes of harm production sought within zemiological enquiry. In its focus on human-agency furthered through technology, this negates the potential to

consider technologies role in harm production and instead positions all agency with the human actor within the focus of an event.

To potentially combat this, further conceptualisations have sought to utilise actor-network theory (Latour, 1999a; 2005) to account for the agentic capacities of technologies. At its most basic level, actor-network theory posits that humans and nonhuman objects comprise a complex set of relationships with agency not existing outside of networks between ‘actants’ (Latour, 1996:373). Within this context, actor-network theory highlights the active role of non-human entities as part of an assemblage of harmful activities – therefore furthering our understandings of technology being more than simply a ‘tool’ for human perpetrators (Henry et al., 2020:1833). Whilst this at first appears promising in the context of technologically-mediated harms, as it shifts our focus away from only articulating the agency of the human actor, limitations of this framework persist – with this being recognised by Latour himself. The generalized symmetry of agency between human and technology within actor-network theory produces a ‘major source of uncertainty about the origin of action’ (Latour, 2005:46), through not allowing for the isolation or consideration of the distinct causative contributions of technologies. The different ways in which technology shapes and forms behaviour and experience become collapsed into a singular presumption of the *type* of relationship between human and technology. Due to this collapse, the ‘questions of intentionality, autonomy and responsibility are not able to be addressed from within the symmetrical infralanguage of the perspective’ (Sayes, 2014: 139). However, Latour’s work further emphasises the difficulty in drawing this distinction through the increasing incomprehensibility of how technologies function. Conceptualised as ‘blackboxing’ (Latour, 1999b), the recognition that technological advancement comes with the diminishing of human ability to understand how technologies function presents a further key concept to be considered in the understanding of human relations to digital technologies. This presents further relational dynamics to be considered in the following chapter (see pages 144-147).

Both extension theory and actor-network theory produce distinct ontological claims as to the extent of human agency within instances of technologically-mediated harm production. To reduce these perspectives to the matter of agency; extension theory places all agency in instances of harm with the human actor who merely utilises technology to further their causal reach, whilst actor-network theory places the human actor and technology on a balanced plain of agency. The ontological claims regarding agentic power conflict with that of Zuboff (2019a), with the conceptualisation of hidden influence and persuasive technologies undermining human autonomy placing the majority of agentic power on the side of technology (see pages 59-60). Similarly to the issue of social determinism in extension theory, the ontological implications of Zuboff's work leaves this vulnerable to technological determinism (see pages 59-60) – with this surfacing in the work's limited conceptualisation of resistance (see pages 71-72). As such, each of these accounts prescribes causative power to either social relations or technological structures. Be it treating technology as an extension of an actor's harmful capabilities, a neutral tool expressing pre-existing harmful intentions, or an overpowering manipulative force over human actors, the social and the technological are collapsed and avoid recognising the dynamic *relations* between humans and technology.

Affordance theory (Gibson, 2014) can be utilised to avoid the issues of social and technological determinism prevalent in these theoretical perspectives. Affordances can be described as conditions of possibility for certain actions that an artefact or environment offers (Hutchby, 2003), allowing for both the functional and relational effects of technology to be acknowledged. In this context, affordances have both functional and relational aspects (Hutchby, 2001) that impact user behaviour and action. This is particularly useful when analysing technology-*facilitated* harm, as it allows for the recognition of harmful events as co-constituted within human-technology relations whilst avoiding socio-technological conflation. Situating the technology within this 'between' role allows for our understanding of technology-facilitated harm to bypass socio-technical determinisms by recognising the action possibilities an object provides an actor (Gibson, 1979/2015). Gibson (1979/2015:130) notes that these action possibilities exist regardless of whether they are perceived or acted upon by an actor –

signifying the potential within affordance theory to recognise hidden influences. Despite this, affordance theory also presents a risk of viewing human-technology relations as purely instrumental, assuming that human actors are entirely in control of the technologies they use (Wood, 2017). This situates our analysis at a user-centred focus, negating questions of what technologies *do to* human actors and maintains an analysis fixated on examining what human actors *do with* technologies. Through affordance theory, we may only see that ‘technology is acted on, rather than shaping the behaviour of its users’ (Wood, 2021:631). From here it becomes clear that the technological transparency highlighted by both Zuboff (2019a) and emphasised in this thesis’ understanding of digitality is unable to be recognised through this framework. Wood (2022) takes our understanding of this further by drawing upon the work of Thrift (2004) and the ‘technological unconscious’. This not only recognises the transparency of technology within our lives, but the often-invisible technological infrastructure in the background of contemporary life that this forms (Wood, 2019:335). Technologies that operate beyond our understanding, through opaque methods, form this invisible technological unconscious and is the site that this thesis seeks to explore. Affordance theory therefore falls short in addressing this structural bypassing of human actor awareness and agency.

6.2.3 Postphenomenology for Studies of Technology Harms

The Postphenomenological developments offered by Wood (2021; 2022) and Wood et al. (2023) do much to rectify this. In recognising that the term ‘technological-facilitation’ does not capture any singular form of harm nor one distinct causal relationship between technology and harm, but that it instead describes an array of distinct harms which can be produced by different causal forces (Henry and Powell 2015: 108), Wood (2021; 2022) and Wood et al. (2023) put forward conceptualisations of technologically-mediated harms that acknowledge these varying forms and layers of relations. Firstly, Wood (2021) differentiates between instrumental and generative relations with technology – with ‘instrumental’ referring to the facilitatory properties of technologies highlighted through

extension theory and affordance theory, whilst ‘generative’ relations refer to ‘relations with technology that are harmful by virtue of what they *do to* actors’ (Wood, 2022:510, emphasis in original). Whilst instrumental harms can be seen in the Critical Criminological explorations of technology-facilitated harm and violence, Wood raises the question: ‘how do technologies contribute to Social Harms beyond being used as an instrument or means to enact harms?’ (2022: 109). Through the recognition of generative harm, we arrive at distinct forms of technology relation harms: ambient harms, alterity harms, exclusion harms, interface harms, harm translation and zemiosis. These six forms can be seen to fall into two subcategories: non-use harms and use harms. Use harms utilise use relations with a technology, instances where an individual employs a technology’s affordances to perform an action, whilst non-use harms utilise non-use relations, in which an individual has not entered into a mediated ‘use’ relationship with a technology’s affordances and thus technology harms occur by virtue of what technologies do to actors (Wood, 2022).

6.2.3.1 Ambient & Alterity Harms

Wood’s conceptualisation of ambient harms is a direct example of non-use harms, in that this harm occurs in instances of technologies directly harming people, non-humans and/or environments whilst operating in a ‘background relation’ (Ihde, 1990:108) with the harmed entity. Ihde’s concept of background relations with technologies denotes the ways in which technologies shape experiences and material conditions whilst being a ‘present absence’ and thus not directly experienced (1990:109). For example, where technologies are not directly used but nonetheless shape the environmental contexts we inhabit. Examples of ambient harms given align predominantly with Green Criminology’s area of analysis (Lynch & Long, 2022; Lynch & Stretesky, 2014; White & Heckenberg, 2014), in that the ambient harms inflicted upon the environment are experienced predominantly by those who have non-use relations with the technologies inflicting the harm. In contrast but still within the realm of non-use harms, alterity harms occur in instances where technologies directly harm people, non-humans and/or environments through alterity relations with the harmed entity (Ihde, 1990:97). Alterity relations go

beyond relations of mediation between humans and technology, instead recognising that ‘the technology becomes quasi-other, or technology “as” other to which I relate’ (Ihde, 1990:107) – meaning that the technology is not experienced as belonging to a network of relations but seemingly an actor outside of a network which ‘erupts into the forefront of our consciousness as the proximal cause of a harm’ (Wood, 2022:516). An illustrative example provided by Wood is that of stubbing one’s foot on a piece of furniture – the harm originates from non-use and the artefact inflicting the harm is not located within a network of relations but is instead encountered as a quasi-other inflicting harm. Other examples given pertain to malfunctioning technologies and the harms inflicted by this.

6.2.3.2 Exclusion & Interface Harms

Wood (2022) also draws attention to the ways in which technologies not only harm through negatively impacting their users but are further able to inflict harm through exclusion. Exclusion harms refer to the ways in which a technology’s design prohibits certain groups from using, utilising, or engaging with it – key examples are to be found within ableist design, and the insidious implication within design decisions of whose bodies are deemed worthy of being designed-in versus those designed-out (Shew, 2020). Further to this, Cyberfeminism has long drawn attention to the design of technologies and digital spaces as exclusionary of women, queer, and racialised communities (Daniels, 2013; Lopez, 2018). Wood (2022) links exclusion harms directly to Pemberton’s (2016) relational harms; whilst the two are not synonymous as exclusion harms are not necessarily linked to social exclusion, this provides a development of zemiological enquiry and furthers the ability to recognise harms not only distinctly effecting marginalised communities but further the ways in which these materially and technologically manifest. Perhaps most prevalent within discussions of the harms of modern technology outside of Critical Criminology are what Wood classifies as interface harms – those harms resulting as an unintentional by-product of an individual’s intentional relationship with a technology (2022:517). Within the context of this thesis, we may also consider the physical and psychological harms of digital technology usage – such as increasing rates of depression, anxiety, body dysmorphia and eating disorders

(Keles, McCrae, & Grealish, 2020; Gewirtz-Meydan et al., 2023; Mishna et al., 2023; Rounsefell et al., 2020; Vitis & Gilmour, 2017) – as interface harms. This is distinctly a form of use-harm, as the harms experienced manifest as a direct correlative to an individual's engagement with a technology.

6.2.3.3 Harm Translation

Most prevalent within Wood's work is the concept of harm translation (Wood, 2022; Wood et al., 2023). Speaking to instances in which a technology invites the actualisation of an individual's harmful intent that had been formed prior to the technology encounter, harm translation employs extension theory to recognise the causal influence of technologies through their ability to extend an actor's causal reach to accomplish harmful actions that would otherwise be difficult or impossible to actualise. Borrowing Latour's formulation of translation as 'the creation of a new goal that corresponds to neither agent's program of action' (Latour, 1999b: 178; Wood, et al., 2023:1393), harm translation acknowledges the co-constituted harmful action resulting from the technologically translated prior intent of an actor. This further utilises affordance theory, in recognising what technology allows its users to do, as well as considering invitations as what a technology *encourages* its users to do. Through this, we understand harm translation as a unique technology-harm relation in which the translated harmful end retains its prior harmful intention as opposed to retaining its harmful form. Wood specifies that a harmful event does not fit this criteria of harm translation 'if the end motivating it would not have harmed if it was actualised without the technological instrument' (2022:519).

6.2.3.4 Generative versus Instrumental Harms

Wood (2021; 2022) has utilised the work of philosopher of technology Gilbert Simondon (1965/2015; 2017) in the formulation of this typology, drawing upon the dichotomy of utility versus technicity. In this context, utility relations refer to relations with technology

in which the technology functions in line with its designers' intentions – its affordances operate as intended by the technology's designers – whilst technicity relations refer to relations with technology in which the technology does not function in line with its designers' intentions. Generative/instrumental harms further our understandings of this by embedding utility/technicity to form a typology of harms by user engagement and designer intention: generative utility harms, generative technicity harms, instrumental utility harms, and instrumental technicity harms (Wood, 2021; 2022). Instrumental utility and technicity harms may be prescribed to many of the examples given in the technology-crime nexus section of this chapter; in that the ways in which an actor utilises a technology to enact harm may be done so in a manner that utilises the technology either in line with its designers' intentions or in conflict with this – such as utilising social media platforms to enact gendered violence (Harris and Woodlock, 2019; Henry and Powell, 2018; Thompson and Wood, 2018) or doxxing (Anderson & Wood, 2021; Douglas, 2016). However, what are of particular interest to this research are generative technicity and generative utility harms.

Generative utility harms, in referring to instances of harm resulting from a technology functioning as intended by its designers, can represent both intended and unintended outcomes of a technology's intended functioning. Such harms can be seen in the fostering of addiction through gambling platforms and mass multiplayer online role-playing games (Banks, 2014; Lee, Cheung, & Chan, 2021; Schüll, 2014), addictions which encourage user engagement with platforms and result in harms that can be seen as intended by the technology's designers. Wood (2021) contrasts this with harms resulting from social media fostering the desire for mediated self-presentation (Yar, 2012) and personalised information environments (Wood, 2017) as harms unintended through technologies operating as intended by their designers. In contrast, generative technicity harms result in the unintended effects of a technology not functioning as its designers intended. Wood conceptualises this as the glitch, the bug and the blackout (2021:642); flaws in a technology's design that are unforeseen by its designers. Instances of this may pertain to the environmental impact of technologies post-consumer; e-waste from the disposal of technological devices (Singer, 2020) may potentially be harms that are

unforeseen by a technology's designers. The utilisation of the 'unforeseen' harkens back to the preventability of harms within the Social Harm framework (Hillyard & Tombs, 2004; 2007) in that whilst harms are foreseeable, they remain preventable – however this leaves much to consider in the wake of the unforeseeable coming to the fore.

6.2.3.5 Zemiosis

Lastly, and most importantly for this current research as a form of generative harm, is Wood's recognition of the ways in which technologies are not simply limited to actualizing pre-existing harmful ends but instead have a formative role in their constitution. Zemiosis, a portmanteau of semiosis and zemia, describes a generative harm relation in which a technology conduces new harmful needs and ends that do not precede the individual's relation with the technology (Wood, 2022:520). Zemiosis therefore describes the role of technologies in the formation of harm-inducing wants, needs, and ends of users. Drawing upon the work of Feenberg (2017), Wood draws attention to the identity-forming power of technologies and utilises this within zemiosis to describe the process through which an individual's relation with technology conduces the pursuit of a new harmful end; such as the persuasive technologies recognised within Zuboff's work which influence users to behave differently or against their best interests. However, persuasion is only one of the mechanisms of zemiosis identified by Wood, as technologies may also *seduce* and *enforce* individuals into behavioural modification. What Wood emphasises here is that harm-inducing ends, needs, and aims may not be instilled in a user through a single use of technology, but may rather be slowly instilled in users through the joining of human behaviour to the technological infrastructure (Hayles, 2006 via Wood, 2022:522). In this way, 'the harmful ends conduced through technology are not...necessarily 'discovered' by users but may instead operate *unconsciously*' (Wood, 2022:522, emphasis added).

6.3 Conclusion: From Technological to Digital

The chapter sought to explore works within Critical Criminology that have engaged in articulating the role of technology in harm production. From briefly exploring works discussing the technology-crime nexus to Zemiological development utilising Postphenomenology, a narrative has formed regarding not only the arenas in which Critical Criminology engages with discussions of technology but also highlights the types of technologies deemed worthy of critical consideration. What we continue to find within this is a lack of recognition for the developments in technological capacity prevalent in the digital context and the mundane technologies through which this operates. To continue to find this oversight only serves to exemplify the need for critical engagement with technologies that lie outside of the criminal justice system or those typically utilised in 'deviant' behaviours.

The discussion within this chapter has broached a plethora of perspectives, frameworks, and approaches to exploring human-technology relations in the production of harm. Although having highlighted the multitude of works in which human-technology relations are explored, we appear no closer to articulating the mundane relations explored within SC. The emphasis found within the literature on the utilisation of technologies for pre-existing human harmful intentions limits the ability to draw comparisons with the hidden influence and behavioural modification mechanisms described within SC that are not enacted by a human actor. Understandably, the literature from within Critical Criminology denotes a specific focus, instances of criminal activity and criminal justice practices, however this is to the comparative neglect of the widespread harms this thesis seeks to explore. The focal point remains on the utilisation of technologies by human actors to produce harm or, in the instances of Wood's work, on the co-production of harm in recognising the agentic powers of both human actors and technology. Notably, what these works do allow for is the recognition of the entering into, or not entering into, a relation with a technological artefact that then produces harm. Generative utility and technicity harms (Wood, 2021) provide an entry point into recognising the relational

aspects of Digital Harm production – forming both a development of Pemberton’s relational harms (2016) and a point to be developed further in the following chapter (see pages 144-147). We are further able to understand from these works the affordances of technological artefacts; the invitational mechanisms that facilitate human interaction and thus behaviour and influence. Interrogating this further with a focus on digital affordances shall also follow in the subsequent chapter.

Further to this, **agency** has been articulated in numerous ways throughout this discussion and in doing so has been conceptualised with varying balances between human actor and technology. By utilising the discussed limitations of extension theory and actor-network theory, we can further understand the risk of technological determinism and the ontological implications regarding human/technology relations inherent within Zuboff’s SC (2019a). Whilst within extension theory agency is seen to lie entirely with the human actor, who is in control of the technologies they use, SC can be seen as the inverse, wherein the technology is entirely in control of the user (see pages 59-60). Through SC, technological agency outweighs that of human actors; this is denoted through the ubiquitous presence of digital architectures and their ability to utilise affordances without user awareness to modify behaviour. Utilising Figure 2 as a visualisation of these shifting agentic balances between Postphenomenological theories and SC, we find rigid structures within which human-technology relations appear to take place. This rigidity calls forth critiques of determinism and socio-technical conflation by flattening what appears to be a dynamic shifting of agentic power between humans and technologies independent of context into a **unidirectional relation**. This leaves SC open to the same criticisms of determinism found in critiques of extension theory – albeit it aimed at technological determinism as opposed to social determinism. The issue of socio-technical conflation and determinism must be addressed if a framework of Digital Harms is to be conceptualised. The discussion from Part 1 of this thesis has emphasised, through exploring the differing ways that digital architectures have been explored (see pages 48-50), that agentic power within human and digital technology relations does not fit the static frames prescribed by extension theory and actor-network theory – nor is it necessarily the rigid technological determinism that SC describes. Instead, we find a

dynamic shifting of agency between human actor and digital technologies; an agentic balance that changes depending on technological affordances and human interpreted reality.

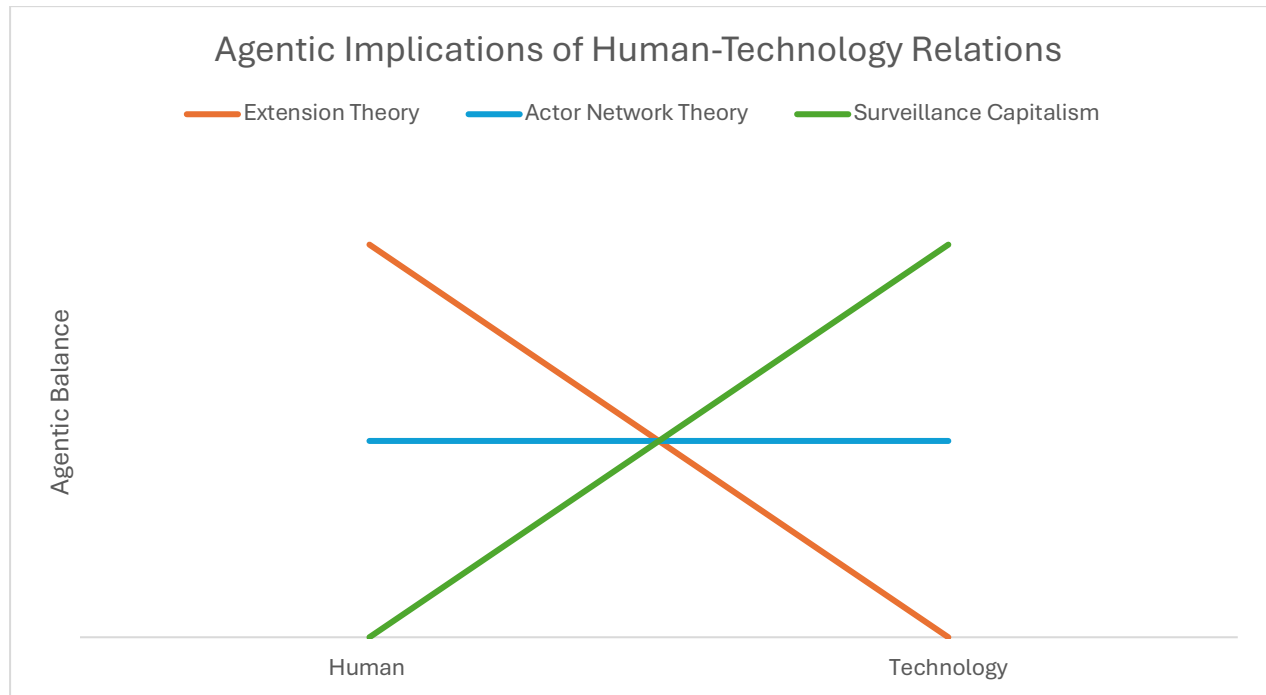


Figure 2: Visualisation of agentic balances found within extension theory, actor-network theory, and surveillance capitalism

However, where we predominantly find the need for development is in terms of specificity. This discussion, both of the technology-crime nexus and of Postphenomenology, provides a vague understanding of the technologies in question. Within Postphenomenology, 'technology' is used as an umbrella term, encompassing all forms of material technology – from the digital devices this thesis explores, to technologies such as firearms explored in Latour's works (1999b), to everyday technologies such as speedbumps as utilised in Verbeek's (2011) analysis. The issue that arises from this broad approach is that, in creating a framework that is equally as applicable to digital architectures as it is to firearms and speedbumps, we fail to understand the specific conditions produced by the digital that both facilitate and mediate harm production. What remains to be established is the distinctiveness between the technological and the digital – or whether this distinction can truly be made.

This shall be the starting point of Chapter 7 (see pages 138-161), as, to understand digitally-facilitated and -mediated harms, we must first explore the distinctiveness between the technological and the digital. The Postphenomenological enquiry has produced key points that will be utilised further in the articulation of digital facilitation and mediation; notably the **technological unconscious** (Thrift, 2004; Wood, 2017), **blackboxing** (Latour, 1999b), and Wood's **generative utility and technicity harms** (2021).

Chapter 7: Understanding Digital Harm

Thus far, Part 2 of this thesis has provided a comprehensive account of the ways in which harms stemming from technological artefacts have been explored within Critical Criminology, and the developments made to this through the utilisation of Postphenomenology. Chapter 6 charted the developments made to studies of harm production through Wood's utilisation of Postphenomenology (Wood, 2017; 2021; 2022; Wood et al., 2023). The Postphenomenological enquiry has produced three key concepts to be taken further in this chapter; firstly, Thirft's concept of the 'technological unconscious' as an invisible technological infrastructure in the background of modern life (2004), secondly Latour's concept of 'blackboxing' (1999b) and the recognition of the increasingly incomprehensibility of technological functioning, and lastly the issue of agency as it pertains to digital technologies. What remains to be found in Chapter 6's discussion is an understanding of technology harms which speaks directly to the digital context, as the technologies explored through Postphenomenology seem analogue-by-default amid a lack of direct attention to the capabilities of networked digital technologies. In moving this analysis toward developing an understanding of Digital Harm, this chapter has two key research questions:

RQ3) To what extent can a distinction between the technological and the digital be drawn?

RQ4) How can this then be used to consider a digitally embedded approach to harm production?

To answer these two research questions, this chapter is split into two parts. The first part explores the distinctions between the technological and the digital, with this comprising three further avenues of enquiry. Firstly, through utilising works within Digital Materialism (Floridi, 2023; 2024), a distinction is drawn between the technological as material and the digital as **dematerial**. Secondly, taking our understandings from human-technology

relations to **human-digital relations** by exploring the two-fold relation and background relation of digital technologies. Thirdly, by recognising the distinct '**ontological force**' (Hoel & van der Tuin, 2013) of digital technologies and their agency beyond their functionality.

The second part of this chapter takes this toward an understanding of Digital Harm. Utilising the framework of facilitation and mediation offered by Postphenomenology, a foundational conceptualisation of **digitally-facilitated** and **digitally-mediated harms** are formed. Through consolidating this with Zemiology, we arrive at an understanding of digital-facilitation as extending and intensifying the proliferation and production of harm. Digitally-mediated harm, however, reaches further and serves to consolidate deeper levels of harm production with the ontological reality of digitality (Negroponte, 1995) – towards an understanding of harm production as a necessary functioning of the digital context.

To this point, I have largely avoided referring to the technological 'things' this research seeks to interrogate due to the caution instilled in the work of Haggerty and Ericson (2000) and the risk of focusing critical attention toward a particular problematic apparatus to the detriment of the context at large (see pages 55-56). However, to support this discussion, examples of digital technologies and the ways in which they are interacted with, and how they interact with users, will be utilised.

7.1 The Technological versus The Digital

In moving our focus from technologically- to digitally-facilitated and mediated harm, questions are raised concerning what, if at all, the distinction between the technological and the digital is. Notably throughout works concerning the advancement of digital technologies, these terms are often used interchangeably and the distinction, if there is one at all, remains vague. Seeking to situate this analysis firmly within the realm of the digital, a clear distinction must be made between the two. Whilst a concept such as 'the

digital' seems an obvious one to grasp in modern society, this cannot be taken for granted as a generalised understanding of what the digital entails as a development of the technological. This section shall therefore draw a distinction between the technological and the digital, pursuing this through the following avenues: (i) distinguishing the material technology from the dematerial digital apparatus; (ii) utilising this to develop an understanding of human-digital relations alongside human-technology relations; and (iii) looking beyond a digital technology's functionality to address the device's own distinct agency and causative influence.

7.1.1 The Material and the Dematerial

Chapter 6 charted the ways in which Postphenomenology situates our understandings of technological artefacts within the parameters of the material, creating a broad understanding of the technological which encompasses both analogue forms of technology and digital technologies (see page 136). What surfaces from this focus on materialism is an instrumental understanding of human relations to the technological and, by extension, the digital, situating our understanding within the operational uses of these artefacts (Ritter, 2021). However, from our starting point of Zuboff's SC, the mechanisms, and thus relations, of the digital cannot be seen as reducible to its material objects. The digital architectures emphasised within Zuboff's work escape this materialism focus, as whilst material devices form what Zuboff calls the 'apparatus of ubiquity' (2019a:292), they form but one of the mechanisms through which SC operates. Conversely, it is the digitised data collection, algorithmic influence, and invisibilised processing these devices afford surveillance capitalists that enable the SC system. Focusing on the use-relation that Postphenomenology is formed around therefore focuses our attention of Digital Harm toward these material devices only, risking the aforementioned 'frantic focus on a particular unpalatable technology or practice whilst the general tide of surveillance washes over us all' (Haggerty & Ericson, 2000: 609, see page 56). Thus, is it the aspects of the digital that forego the material that will be recognised here.

The digital does, however, hold a material presence encapsulated by the digital technologies through which and by which digitality as a state of being is realised and the digital space accessible. In this way, SC is inseparable from its material manifestations; or as Zuboff states: ‘although it may be possible to imagine something like the “internet of things” without surveillance capitalism, it is impossible to imagine surveillance capitalism without something like the “internet of things”’ (2019a:202). ‘The Internet of Things’ (IoT) as a concept stems from Weiser’s ‘ubiquitous computing’ (1991) and refers to ‘the network of dedicated physical objects (things) that contain embedded technology to sense or interact with their internal state or external environment. The IoT comprises an ecosystem that includes things, communications, applications and data analysis.’ (Tully et al., 2014:6). As a definition, there is no universal consensus (see Madakam, Ramaswamy & Tripathi, 2015), however for the purpose of providing a technical, foundational understanding this shall be utilised here. IoT therefore, as Zuboff posits, can be seen as the material apparatus utilised by SC – the materiality through which data collection and analysis, algorithmic influence, and behavioural modification is enacted. In this way, Zuboff highlights the metabolic relationship between SC and IoT.

However, it is important to note the potential risk of misinterpreting the technological and the digital as being antithetical when drawing a distinction based on materialism. As will be highlighted in the examples given in this section, the digital hyperconnected and networked apparatus of SC has a distinct material presence and impact – with the power and control of SC only being made possible through these material means. Drawing again on Zuboff’s earlier words; SC is unimaginable without the material apparatus through which it operates – put simply, the digital is impossible without the technological, making these two modes inextricably linked. Contrary to the material focus explored in Chapter 6’s discussion of Postphenomenology, and as has been highlighted by Floridi (2023; 2024), prominent works within Digital Materialism have pointed to the digital as being immaterial; non-material. The focus within Digital Materialism on the digital as immaterial, however, has recently shifted toward what Floridi (2023) calls the ‘hardware turn’; a neo-materialism which aims to recognise the tangible material presence and

impacts of the digital. This shift in focus toward the material of digital technologies is arguably 'a reaction to the myth of the immaterial, rather than pointing to an actual immaterialization of culture' (Raessens et al., 2009: 10).

This materiality, however, is secondary to the functioning of SC at the point of user interaction. When one interacts with an IoT device, it is not simply the material device being interacted with but is further the digital systems it grants access to. Thus, in the functioning of SC, the material form of the apparatus is secondary to the user's interaction with these underlying systems – the device itself is a conduit for the data collection and behavioural modification taking place. We can therefore begin to distinguish the technological from the digital by tracing this line of material priority; the technological, in its primarily analogue form, holds its materialism as paramount within the way it operates and can be interacted with. Comparatively, the digital operates in an abstracted form as it is the software of the digital system which takes priority whilst the material hardware of the digital becomes secondary. In this way, the digital is *dematerialised*.

Lending the concept of dematerialisation from Lippard and Chandler's 1968 essay '*The Dematerialization of Art*', we can articulate the departure from materiality seen within the advancement of digital technologies and move further toward a distinction between the technological and the digital. Lippard and Chandler (1968) utilise 'dematerialisation' to denote the ways in which the material presentation of an art object is secondary to the underlying concepts behind the work. This dematerialisation is implemented in digital technologies, as one's devices provide entry points into the paramount concept and reason for possession of such a device – the digital realms it grants access to. The hardware exemplified by IoT is superseded by the material object's software capabilities – and the infinite, unpredictable, possibilities this presents for functional use. Dematerialization has been utilised to refer to the digitisation of previously analogue technologies; prevalent examples of this concern the introduction of the iPod (Magaudda, 2011) and music streaming platforms such as Spotify and Apple Music through which the music-listening experience has been dematerialised (Magaudda,

2021). The material object of cassettes, vinyl records, and CDs are now secondary to the information they hold; the music held within these material objects has been dematerialised to electronic information, access to which is granted through software, user profiles, and monthly subscriptions. This dematerialization is a signifier of the digital; further examples such as Amazon's Kindle and film and television streaming platforms such as Netflix, Amazon Prime, and Disney+ all offer entertainment previously offered by material technologies in a dematerialized form, only accessible through a digitally connected and networked device.

From this point, we can therefore distinguish the technological from the digital based on material interaction. For the technological, the human relation primarily concerns materialism; one must interact materially with a technological object to enter into a relation with it. The digital, however, concerns materialism on a secondary basis; the material object operates as an access point to digital platforms, systems, and architectures that have been dematerialised and often obfuscates the materialism of digital capabilities. A further grounding example of this is digitised 'Cloud' storage; 'The Cloud', both in its invisibility to its users and in its nomenclature, hides the material objects through which it operates. Obfuscated by this name, the ways in which users access and interact with digitised storage, and the seemingly infinite capacity of 'Cloud' storage is the vast network of undersea cables (Ganz, et al., 2024), the numerous immense data storage centres housing hardware (O'Brien, 2024), and the enormous electricity and water usage needed to make such digitised storage possible (Monserrate, 2022). 'The Cloud' is dematerialised to its users; opaque in its operations and its hardware presence removed from awareness, as user interaction takes place via software and invisibilises the environmental costs of data storage. Such dematerialisation can be extended to all digital spaces, as the material hardware requirements for operating these are obfuscated from users and increasingly abstracted from user understanding.

In utilising dematerialization, this analysis recognises the dynamic actuality of digital technologies in having a material, technological presence and a dematerialized, digital

extension. Through this we can recognise that the technological material device is secondary to the digital dematerial systems this grants access to, shifting our understanding towards a **materialism priority** in user interaction. To this end, the digital is a development of the technological with the two being inextricably linked. This understanding necessitates a recontextualization of the human-technology relations explored in Chapter 6.

7.1.2 Human-Technology Relations versus Human-Digital Relations

The question arises; when one enters into a use-relation with a digital technology, what exactly is one entering into a use-relation with? Thus far, this section has established that the digital is a developed component of the technological; digital technologies both have a material presence and a dematerial facet in their usage, and it is the digital networked component that takes precedence in its use function. This dematerialisation greatly recontextualises the human-technology relations explored through Postphenomenology in Chapter 6; if we are not simply interacting with a technology in the ways Postphenomenology explores, how are we to understand this? Thus, recognising the digital as an extension, and the priority, of a technology's use function necessitates a re-evaluation of human use-relations – toward an understanding of human-digital relations. It must be acknowledged that the digitally-enabled use-functions of a digital technology are theoretically infinite; the number of downloadable applications and software available to consumers allows for a vast array of ways to use a digital device, making the task of developing an understanding of human-digital relations difficult. Therefore, a broad approach will be taken here that, whilst not dealing with the specificities of use, conceptualises the digital as the dematerialized realm of software available through material technologies.

From this understanding alone, we arrive at an understanding of the use-relation entered into with digital technologies as being twofold; a user interacts with the technological artefact, much as Postphenomenology explores (see pages 125-128), however they are

also interacting with the extended digital capabilities of the technology. Put simply, I am currently in a use-relation with my Apple MacBook; however, this is enabling me to further enter into relations with Microsoft Word, Google Chrome, Microsoft Outlook, Microsoft Teams, and Spotify all at once as I type this sentence. The material technology is a conduit for the digital architectures it is granting me access to, I am only interacting with the material for the access it gives me to the dematerial. Again, my access to the dematerialized software is my priority when using my material MacBook. The use-relation here is very different from those explored through Postphenomenology, in that there are numerous use-relations occurring at once and each of these software applications unleashes a new wave of digital affordances that influence my behaviour and have their own causative agency. The use-relations can be shifted between at alarming speed; switching my digitized use-relation from Microsoft Word to Google Chrome requires a split-second swipe on my MacBook trackpad. This is a transition afforded by the material technology granting access to the dematerial software. The use-relation I am currently in with my MacBook is therefore prismatic and encompasses both the material affordances of the device and the dematerialized capabilities of this; theoretically infinite in the use-relations it enables and unpredictable in the ways it can be utilised.

It may, therefore, seem an impossible task to conceptualise an understanding of human-digital relations with this prismatic use-relation in mind. However, recognising the *fluidity* of the use-relation in comparison to the rigidity of the frameworks explored through Postphenomenology signifies a development. The twofold use-relation of digital technologies surpasses the materialism and functionality focus of Postphenomenology (Ritter, 2021), in that the plethora of digitised use-relations being entered into simultaneously through a singular material device create infinite use and influence possibilities. The presence of digital technologies is therefore layered; as the material device is a gateway presenting further gateways into various digital possibilities.

This fluidity can also be extended to the perspective of the user, moving away from a singular understanding of user relations and toward a recognition of the dynamic relations that unfold between user and digital technologies. Keymolen (2020)

emphasises the differences prevalent in user perspectives of the technologies themselves, highlighting that a user with more technical knowledge of technological/digital operations is likely to engage in different use-relations than a user with a strictly consumer perspective. This is extended even further when considering increasing user awareness of data collection and algorithmic influence, and the varying conditions and contexts in which users continue engagement with digital technologies – including, as Keymolen (2020:12) highlights, wilfully overlooking algorithmic manipulation through a desire for the hyper-personalized digital spaces this creates. Postphenomenology can be seen to flatten these varying user dynamics into a generic understanding of user-relations from the perspective of the consumer; one without technical knowledge of a technology's affordances. Shifting our understanding toward human-digital relations necessitates recognising these shifting dynamics of user engagement with digital devices.

However, what must also be recognised is that the digital, in Zuboff's SC and in this thesis' understanding of digitality, does not necessitate entering into a direct relation with a device but is facilitated through networked capabilities via non-use as well. Whether one engages with a material device or not, the networked capabilities of the surveillant assemblage (see pages 56-57) is present and collecting data. Thus, human-digital relations are not simply use-relations, but instead constitute non-use relations as well – or as previously highlighted through Ihde's work, take the form of background relations (1990:108, see page 133). We can adapt the concept of technologies as a 'present absence' (Ihde, 1990:109) to encompass this networked capability emphasised in SC and further utilise Thrift's 'technological unconscious' (2004) to recognise the invisible technological infrastructure that is always present. Through this lens, digital technologies do not need to be directly used to shape the contexts we inhabit – as emphasised by Zuboff (2019a), one's data is being captured regardless of digital technology use. The human-digital relation is therefore an all-encompassing state of *being* – returning us again to Negroponte's 'digitality' (1995) and the possibility of augmenting Thrift's concept toward a recognition of the 'digital unconscious'. This raises further distinctions to be explored, concerning the overt agentic power of digital

technologies that surpasses the causative agency explored in Chapter 6 (see pages 134-137) and the ontological implications of the digital.

In seeking to understand human-digital relations, this section has produced three key findings: (i) the use relation between human and digital technology is twofold, inclusive of the material technology and the dematerial digital architectures this grants access to; (ii) this use relation is fluid and dependent upon context and user awareness; and (iii) the digital forms an all-encompassing non-use relations, creating a context of digitality.

7.1.3 Functionality and Digital Agency

What remains to be explored in this analysis is the tension highlighted in Chapter 6 concerning the implications of **causative agency** in the works of Zuboff compared to those within Postphenomenology. Arising from Chapter 3's discussion is the implication that digital technologies within SC possess greater causative agency that bypasses user awareness (see pages 59-60); specifically, Zuboff (2019a; 2019b) emphasises the invisibility of algorithmic influence and its ability to go undetected in many user interactions. Conversely, Postphenomenology has emphasised agentic balances in favour of a technology's user or, considering actor-network theory, an even balance between technology and user (see Figure 2, page 136). This chapter has thus far emphasised the dynamic use relations prevalent within user interactions with digital technologies, that these are often layered interactions and shift based on context and user understanding of the underlying digital systems. However, what has yet to be addressed is the issue of the device's agency and ability to influence user behaviour. This section shall therefore proceed in consolidating the implication's of Zuboff's work toward an understanding of the distinct causative agency wielded by digital technologies beyond their functional use and addressing this issue of technological determinism in SC (see pages 59-60). To do so, we must recognise the ontological force of digital technologies (Hoel and van der Tuin, 2013) beyond their functional use.

From Zuboff's SC, we are to understand that digital technologies have great causative agency to influence, and ultimately modify, user behaviour. Through pervasive data collection and machine learning algorithms, the user's agency is bypassed by a digital power that captures and commodifies for corporate profit. As highlighted in Chapter 6's Figure 2 (see page 136), this situates causative agency more on the side of the digital technologies than the user. Consolidating this with the profit generation of surveillance capitalists, this leads to an understanding of digital technologies as having a distinct agency in the use-relations being entered into with users. Simply put, Zuboff emphasises that digital technologies are imbued with a *motivation* toward maximising data collection and thus profit generation for surveillance capitalists. This returns us to the distinction between utility, what technologies are designed to do, and technicity, what technologies do that exceeds the will of its creator (Hoel & van der Tuin, 2013:188), and further to a murky understanding of intentionality versus preventability that the corporate crime frameworks discussed in Chapter 1 (see page 19). Zuboff, and numerous cases from Big Tech whistleblowers (see Paul & Milmo, 2021), point toward an intentionality and utility in surveillance corporation activities and their digital technologies – specifically designed to be addictive, and with overt knowledge of the harmful implications of their products and services (Morris, Murphy & McCarthy, 2024).

However, this speaks only to a digital technology's functionality – how it is used – and negates an understanding of how this digital agency is exerted of its own accord. This section has already emphasised that the digital is also a non-use relation and thus necessitates an understanding that surpasses a purely functional understanding of agency. As was highlighted by Wood (2023), whilst technologies are utilised as instruments to enact harm, their contribution to harmful events is not limited to this instrumentality. Hoel and van der Tuin (2013), through a diffractive reading of Simondon (1965/2015) and Cassirer (2012), emphasise that technological mediators are not ontologically neutral but possess distinct agency or ontological force. The ontological force of technologies speaks to their capacity to bring into existence new and unanticipated effects and needs (Simondon, 1965/2015), beyond those that they were designed to produce. We can consolidate this with Zuboff's SC, recognising that digital

technologies can rarely be seen as the neutral artefacts explored within Postphenomenological enquiry. Recognising this allows this analysis to avoid the dichotomous pitfall of whether Digital Harms are intended or not, and instead recognise the ‘unintended or unanticipated consequences arising from the intended functions or mediations of technologies’ (Wood et al., 2023:512). Therefore, whether digital technologies are designed with this level of agency is tangential – digital technologies possess a distinct ontological force which intervenes in user behaviour and action. The agency of algorithmic influence, to use but one SC mechanism as an example, to operate as intended by its designers but with unanticipated effects speaks to the formal indifference of the SC system emphasised by Zuboff (see pages 43-44) – the digital technology operates as intended, but what it produces and the effects this has is unimportant to SC.

We therefore arrive at an understanding of digital agency which recognises the shifting dynamics between user and digital technology; one in which the digital technology has a distinct ontological force to influence and modify user behaviour, but the efficacy of this is context dependent and fluctuates based on user susceptibility and knowledge. The recognition of these factors has clear implications for the issue of resistance in this analysis, a point which will be discussed further in Chapter 10 (see pages 213-232). For now, however, we can develop our understanding of what makes the digital distinct from the technological through this understanding of agency and the digital’s ontological force.

7.1.4 Conclusion of 7.1

In seeking to answer the question ‘can we distinguish the digital from the technological?’, this section has produced several findings. Primarily, the digital is a development of the technological – currently technological development necessitates that the digital also be technological, however the technological is not always digital hence the analogue. This seems a common sense ‘finding’ to claim to have arrived at, however it is important to

emphasise in order to avoid appearing to assert that the digital has an inherent novelty or 'newness' to its mechanisms. The digital is an extension of technological capabilities, and so whilst Postphenomenology's understanding of technology may have served as a foundation for this analysis a development beyond this is also required.

Distinctions between the underlying mechanisms of the digital which distinguishes it from a technological lens were also found. We can summarise these key elements of the digital as follows:

1. The digital is *dematerial*, operating through materiality but secondarily, abstractly, and often invisibly.
2. The digital is a *twofold use-relation*, inclusive of the technological use-relation and the use-relation to digital systems.
3. The digital is also a *non-use* relation, a pervasive background relation of digitality, forming a 'digital unconscious'.
4. The digital has a distinct agency, non-neutral and geared toward data collection, and *ontological force*, whether one has entered into a use-relation with it or not.

These four conceptual distinctions allow this analysis to continue toward developing an understanding of digitally-facilitated and -mediated harm that can speak to the gaps in knowledge highlighted in Chapter 6's discussion of technology harms.

However, these distinctions do raise methodological issues moving forward. To emphasise the digital's invisibility and constant background relation points us to what Latour referred to as 'blackboxing' (1999b). Denoting 'the way scientific and technical work is made invisible by its own success...Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become.' (1999:304), we seem to arrive at an impasse in the researching of these systems and the digital context. In

recognising the increasing operational obscurity of digital technologies, we further realise that this also becomes more difficult for researchers to access (Reichert & Richterich, 2015:5). These are methodological issues to be overcome in the conceptualisation of Digital Harm, necessitating a process through which Digital Harm may be refined through application and renegotiation.

7.2 Digital Harm

From establishing a distinction between the technological and the digital, this now justifies the need for an understanding of Digital Harm that goes beyond conceptions of technological facilitation and mediation. The four conceptual distinctions highlighted in section 7.1 (see page 149-150) create a context that, whilst being a development of the technological, emphasises differing mechanisms in how digital technologies operate, are engaged with, and influence through their own ontological force. Stepping away from understanding digital technologies as simply neutral artefacts allows for recognition of the pervasive harms stemming from this digital agency and further incorporate SC into a conceptualisation of Digital Harm. This section shall therefore advance this analysis by utilising the works of Zuboff (2019a; 2019b) and Zemiology (Pemberton, 2016; Raymen, 2023) to conceptualise Digital Harm in terms of facilitation and mediation. This shall create an argument that digitally-facilitated harm creates an **extension and intensification** of harm production, whilst digitally-mediated harms concern those stemming from **the ontological context of digitality**.

7.2.1 Digitally-Facilitated Harm: Extension and Intensification

Whilst technological-facilitation refers to the ways in which technology furthers the causal powers of human actors (Steinert, 2016), digital-facilitation through the lens of Zemiology furthers the causative power of harm production through hyperconnectivity, accessibility, and an increased speed of production. Digital-facilitation does not denote

new forms of harm emerging but instead refers to how the digital effects where harms emerge, how they manifest, and who they impact. Digitally-facilitated harm denotes an extension and an intensification of harm production, able to be enacted in once private spaces and continuously without obstruction.

With digital technologies comes increased accessibility, both in the form of user access to digital spaces but also in the digital's unbridled access to users' private spaces and lives. What this accessibility entails is an encroaching of harm production into the private sphere, with diminishing opportunities to escape this. Digital-facilitation sees harm production taking place from within the private space, as well as in the broader social contexts discussed within Zemiology. As Zuboff highlights (2019a, see page 48), the encroaching of digital devices into our private spaces leaves no reprieve from the surveillance gaze – and in this instance, from Digital Harm production. The prevalence of smart devices, for example, extends the spaces into which harms can be produced. As highlighted by Nobles (2018) and Russell (2024), algorithmic biases serve to reinforce structural inequalities, with these inequalities reproducing themselves through a user's own personal devices within the private space and through an intimate use-relation. The psychological, emotional, relational and autonomy harms inflicted (Pemberton, 2016) from this structural inequality are produced in the digital space with a closeness to the user which is seemingly removed from the wider social contexts Zemiology analyses. This denotes an extension of the harm production reach, an extension which allows harm production to take place in increasingly intimate settings between user and digital technology.

However, this extension also takes place within the global context insofar as harm is produced beyond geographical borders and at the level of the population. This brings our understanding back to the harms of globalisation discussed by Tombs and Whyte (2020), recognising the global reach of corporate harms (see page 24). Through digital-facilitation however this takes place with greater efficiency of harm production. In this way, digital-facilitation denotes an intensification of the speed at which harms are produced. The efficiency of machine learning algorithms produces instant results, and the prevalence

of digital technologies renders our accessibility continuous and unobstructed (Zuboff, 2019a). To use Google's own words,

'As you type, we predict the rest of your query, comb through billions of web pages, rank the sites, images, videos, and products we find, and present you with the very best results. The entire process takes, in many cases, less than a tenth of a second – it's practically instant.'

(Think with Google, 2012).

The practically instant speed at which the digital responds to its users is indicative of this intensification, facilitated by this efficiency the algorithmic biases – to use one example – are also reproduced practically instantly. Such data processing speeds allows for Digital Harm production to be near instantaneous – with this posing further difficulties for prescribing accountability for machine learning outputs (Nobles, 2018), intervening in harm production, and resistance to this system.

Yet, this intensification also takes place in the material sphere. The environmental impacts of digital technologies see an intensification of extractivism and e-waste in the manufacturing, consumption, and disposal of digital technologies (Bedford et al., 2022; Boukli & Kotsakis, 2023). The aforementioned network of undersea cables which enable digital connectivity form a vast drain on natural resources and spur rampant extractivism (Mwema & Birhane, 2024), the energy consumption of expansive data centres which operate Cloud storage, AI models and Internet search systems (Brodie, 2023; Monserrate, 2022; Rahman-Jones, 2024) is known to outweigh the energy consumption of entire countries (Bryce, 2020) and increase carbon emissions (Dhar, 2020), whilst the average lifespan on a smartphone is 1.98 years (Prabhu & Majhi, 2022) before being disposed of and replaced in the wake of rapid technological development. The material facets of the digital require near constant maintenance and replacing, with this process intensifying as developments in AI become increasingly demanding on natural resources (Spelda & Stritecky, 2020; Zhuk, 2023). Addressing the rapid acceleration of

manufacturing and consumption invisibilised within the digital's dematerial systems is a matter of urgency. Whilst the attention necessary to do so lies outside of the scope of this current analysis, the environmental and ecological material impacts of the digital denotes a key facet of digitally-facilitated harm distinct to the SC context.

Through digital-facilitation we witness an extension and intensification in the production of the harms identified by Hillyard and Tombs (2004; 2007) and Pemberton (2016). The harms identified within current zemiological enquiry are produced with an extended reach and an intensification garnered from the accessibility and hyperconnectivity of the digital. Whilst this analysis has only been able to draw on a handful of examples to support the conceptualisation of digitally-facilitated harms, these are by no means exhaustive of the ways in which this manifests. To speak fully to the many forms this takes is to be an ongoing process, amid corporate obfuscation and digital and technological blackboxing (Latour, 1999b). This has, however, enabled a foundational conceptualisation of digitally-facilitated harm to be built and to be utilised further in this research.

7.2.2 Digitally-Mediated Harm: Enforced Digitality

What remains to be explored are the ways in which digitality, as the ontological condition of the digital context, produces harm. Digitality (Negroponte, 1995) as a term has been utilised throughout this work, however the full implications of this have yet to be explored. The ubiquitous presence of digital devices and spaces, the blurring of online and offline towards the concept of 'onlife' (Floridi, 2014), the suffusion of life by networked technologies (Hassan, 2020) all comprise the context of digitality. This cumulative digitality amid growing blackboxing creates a context in which human beings are increasingly programmed out of decision-making processes; with digital technologies acting upon us more than we are able to act upon them (Hassan, 2020) whilst the digital irreversibly changes the world around us. This is the crux of digitally-mediated harm; not

only the loss of individual freedoms that Zuboff highlights, but the agency within our digital condition to act as ‘analogue’ beings (Hassan, 2020).

The non-use, ever-present background relation of the digital furthers Zuboff’s conceptualisation of SC; providing a theoretical grounding to the all-encompassing and omnipresent mechanisms of surveillance she describes. This further speaks to Thrift’s ‘technological unconscious’ (2004) as an invisible technological infrastructure present in the background of contemporary life, and the possibility of reframing this as a ‘digital unconscious’ in the current context. Just as Zuboff describes SC as an inescapable force, so too does digitality here describe the condition of life as digitally-mediated – ineluctable as an ontological reality. The implications here are insidious; whilst technological-mediation also described a condition of existence in which life was ever mediated by the technological apparatuses around us, this was done so through an understanding of these artefacts as neutral tools. The ontological force of digital technologies overwrites this neutrality; the digital has its own agency, its own embedded motivations within its existence. This agency is governed by capital accumulation; with the undermining of human agency forming a necessary functioning of surveillance capital accumulation. In this way, digitally-mediated harm is the experience of being digital. As Zuboff states, ‘Although it is easy to imagine the digital without surveillance capitalism, it is impossible to imagine surveillance capitalism without the digital.’ (2019b:12). Insofar as digitality is the ontological reality of current existence, harm production is a necessary functioning of SC and thus digitality.

I have previously cited works describing the distinction between perceived autonomy and ‘true’ autonomy in digital spaces (Wertenbroch et al., 2020, see page 92), however the condition of digitality and the recognition of digital agency beg the question of whether such ‘true’ autonomy is possible in the context of digital-mediation. Understanding the shifting dynamics of user agency in relations with digital technologies leaves this in a state of flux; often overpowered by a digital technology’s agency (Keymolen, 2020) yet dependent upon the user’s own technological knowledge and the conditions of their relation to the digital. The dominant agentic power in each interaction is fluid, however

the context of digitality necessitates these interactions as a key facet of living – whether this is a direct use-relation or a non-use relation. To be in the digital context is to be in an existence of *enforced* digitality. Whilst the issue of disengaging and resisting the digital comprises its own chapter that is forthcoming (see pages 213-232), it is important to emphasise here the diminishing opportunities available to disengage from the digital and that any form of disengagement is often only short-term – requiring immense labour to achieve or is a luxury only to afford to some (Kuntsman & Miyake, 2022). Digitality must be returned to; as the default condition of existence required for participation in society. In this way, harms are produced through the very notion of our lives being digitally-mediated.

This denotes the developments that were highlighted in Chapter 4 regarding Pemberton’s autonomy harms (2016, see pages 89-92) and the possibility of situating this within the digital context, understanding autonomy harms as the intervention in, obstruction of, and *undermining* of autonomy as a necessary function of SC and the digital context. Amid rising concern for the effects of digital technologies on the cognition of young people (Haidt, 2024), it becomes a point of urgency to draw attention to the cognitive harms stemming from our digital existence. The empirical researching of these impacts is in its infancy despite garnering critical attention for some time (see Carr, 2010). Despite this, there is a wealth of research from within neuroscience highlighting the ways in which the proliferation of digital technologies is affecting cognitive processing and neurological activations (see Loh & Kanai, 2016 for a meta-analysis of the field). Far more research is needed to fully grasp the implications of the neurological effects being documented, yet it remains clear that digitality is changing our cognitive processes and neurological development.

As Canning and Tombs (2021:66) highlight, ‘[the] dimensions of harm need to be understood complexly: [harms] have numerous dimensions, some of which are much more readily apparent than others’. Harm, therefore, is often articulated in an empirical sense, ‘perhaps always subject to challenge, contest, confirmation and in the absence of any epistemological or ontological certainties’ (2021:102). This raises a dichotomy

within discussions of harm, between allowing for a range of ontological perspectives to be discussed and debated, in which ‘Various perspectives sit horizontally next to one another, more or less equal in merit’ (Raymen, 2023:13), and the need for critical clarification upon an established, universal ontology of harm. The harms sought to be recognised through an acknowledgement of digitally-mediated harm lie beyond the empirical realm of being readily apparent, posing methodological tensions akin to those highlighted through blackboxing (see pages 154-155). This is an issue to be discussed further, as the question of methodology continues to produce tensions in this thesis.

There are many avenues to be explored through the concept of digitally-mediated harm, with this section having only highlighted a few of the possible routes of enquiry that will become realised through such a lens. However, what this section has sought to do is begin to understand what it means for studies of harm to be situated within an understanding of digital-mediation, and further what digital-mediation means for studies of harm.

7.3 Conclusion

This chapter sought to answer two specific research questions, **RQ3** and **RQ4** of Part 2 of this thesis: (**RQ3**) what are the distinctions, if any, between the technological and the digital, and (**RQ4**) how can this be used to consider a digitally embedded approach to harm production? In seeking to answer the first of these research questions, four key distinctions which sets this analysis apart from the frameworks offered by Postphenomenology were solidified:

1. The digital is *dematerial*, operating through materiality but secondarily, abstractly, and often invisibly.
2. The digital is a *twofold use-relation*, inclusive of the technological use-relation and the use-relation to digital systems.

3. The digital is also a *non-use* relation, a pervasive background relation of digitality, forming a ‘digital unconscious’.
4. The digital has a distinct agency, non-neutral and geared toward data collection, and *ontological force*, whether one has entered into a use-relation with it or not.

In seeking to answer the second of these research questions, we arrived at an understanding of digital-facilitation as an extension and intensification of harm production in its tangible and observable form, and digital-mediation as harm production as a necessary functioning of digitality. The implications of this for zemiological enquiry are numerous, notably that Social Harm production in the digital context takes place at unprecedented scale and efficiency, and that digitality is a context of constant harm production in which the harms experienced lie at an internal level beyond the social sphere.

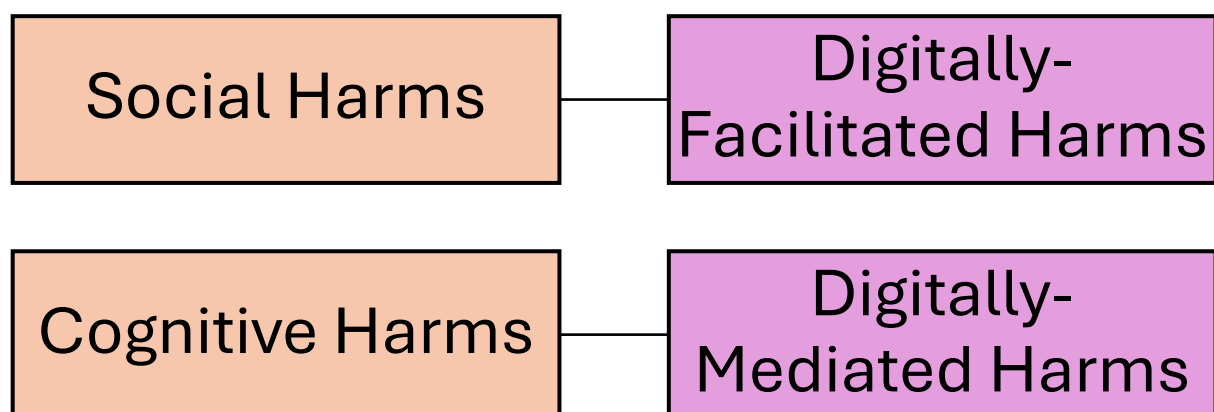


Figure 3: The progression from social and cognitive harms to digitally-facilitated and digitally-mediated harms

From this understanding, we arrive at a development of Figure 1 discussed in the conclusion of Part 1 (see page 97). The above Figure 3 illustrates the identified developments from Social Harm to Digitally-Facilitated Harm, and the Cognitive Harms highlighted through Zuboff’s work (see page 96-98) and Surveillance Studies (see pages 56-59) towards an understanding of Digitally-Mediated Harm. This development forms

the second stage of conceptualising a Digital Zemiology framework, demonstrating the embeddedness of digital technologies and digitality within this understanding of harm.

7.3.1 Harm Beyond the Social

Whilst digitally-facilitated harms speak to those that can be empirically evidenced, consolidating digitally-mediated harm with current zemiological understandings of harm production produces difficulties. As Raymen highlights, ‘When technology does come under critique...the message is very much focused on the social application and use of technology...Little attention is given to those harms which perhaps lurk beneath the empirical realm of social experience.’ (2023:14). Therefore, to understand digitally-mediated harm is to draw attention to harms which lie beneath the social, to those harms which in their intelligibility often escape our awareness and struggle to be articulated. In seeking to research the intangible harms of the digital which escape articulation, we reach a point of incompatibility with dominant social science methodologies. Such methodologies typically require a level of awareness to be empirically evidenced. This echoes the methodological issues highlighted in Chapter 3’s discussion of the implications of Zuboff’s SC (see pages 72-75), and further resonates with the concerns raised by Reichert & Richterich (2015) that whilst technological systems become increasingly incomprehensible in their operations to consumers, so too do they become inaccessible to researchers. The task in continuing to conceptualise digitally-mediated harms is therefore also a methodological one; in seeking to apply these conceptualisations the theoretical grounding of Digital Harm may be refined through its operationalization. Through application, the ways in which digitally-facilitated and digitally-mediated harms manifest may be made clear and an understanding of Digital Harm solidified in the process. We therefore arrive at a position that, in seeking to break new theoretical ground, theory must be used as method and refined through its application.

7.3.2 Producing Focused Codes

Implementing abductive analysis (Timmermans & Tavory, 2012, see Chapter 5) has allowed for the utilisation of key concepts developed within this chapter to become the focused codes through which to identify codes throughout the case study. The broad theme identified previously in this research is that of **'Digital Harm'**, with **'digitally-facilitated harm'** (see pages 151-154) and **'digitally-mediated harm'** (see pages 154-157) forming two further broad themes that have been identified within this chapter. **Dematerialisation** (see pages 140-144), **digitality** (see page 154), and **blackboxing** (see pages 150) form further codes developed within this chapter that are to be used throughout the case study analysis. The rationale in utilising these key concepts as focused codes is to utilise the data analysis process as an opportunity to review the theoretical concepts that have been developed and synthesise these in a real-world, digital context application. In doing so, Chapter 8's case study is utilised as a site to ascertain if these concepts resonate within the ultra-fast fashion context and, ultimately, the utility and limitations of these concepts towards developing a theory of Digital Zemiology.

Chapter 8: Application: The (Ultra) Fast Fashion Industry

As the primary context in which the developments of digitalization became apparent for this thesis, the use of the ultra-fast fashion industry allows for these initial observations to be investigated further and within a context that is specific to digitality. As the Preface to this thesis made clear (see page xiii-xviii), observing the digital developments of the fast fashion industry necessitated engaging with theories of digitality and surveillance, thus recognising the need for a theory of Digital Harm. The ultra-fast fashion industry, as is the case for the fast fashion industry, remains a point of little critical engagement within academic literature and therefore further necessitates establishing this as a worthy area of zemiological enquiry. Approaching this context with both the aim of bringing zemiological awareness to the fast and ultra-fast fashion industries whilst also seeking to generate theory necessitates a twofold research question.

In seeking to explore the ultra-fast fashion industry, this chapter must first establish a critical context of the fast fashion industry. This shall be done by first discussing the fast fashion business model and the rise to market dominance that this has achieved in recent decades. Following this, the Social Harm approach is utilised to discuss the harmful impacts of the industry in three main areas: (i) environmental harms, (ii) harms to the garment workforce, and (iii) harms to consumers. With this critical context of fast fashion established a case is then made for the distinction of ultra-fast fashion, outlining the differences in business models and practices, with a key emphasis on the centrality of the digital context to the development of ultra-fast fashion from fast fashion. The last two sections of this chapter then move toward the application of digitally-facilitated and digitally-mediated harm to the ultra-fast fashion context, seeking to investigate how this typology of harm manifests within the industry. Finally, conclusions are drawn which

make clear the key facets of digitally-facilitated and digitally-mediated harms identified within the case study to assist theory generation in Chapter 9 (see pages 201-210).

8.1 The Context of ‘Fast Fashion’

The fast fashion business model is characterised by three key pillars: quick response times, high product turnover, and ever lowering production costs (Sull & Turconi, 2008). Rising to dominant the clothing industry since the 1990s, fast fashion corporations have grown to be a ubiquitous presence both on the high street and in our wardrobes. The average consumer is familiar with the presence of these corporations; Primark, H&M, and Zara are among the household names that embody this business model. Through expanding the traditional two-season structure of the fashion industry, fast fashion corporations have created a business model in which new products are manufactured at a continuous rate – with hundreds of new products available weekly for consumers to purchase. Maintaining the lowest prices for consumers is key to the competitive market of fast fashion, enticing consumers into a cycle of constant consumption as the affordability and accessibility of these brands encourages overconsumption. Many of these brands have risen to dominate a now global market, forming conglomerates of fast fashion retailers comprising of multiple brands aimed at different target markets. Inditex, for example, is the little-known name of the parent company of six separate fast fashion brands; Zara, Pull & Bear, Oysho, Bershka, Massimo Dutti, and Stradivarius whilst also having a ‘fast furniture’ brand, Zara Home – an increasingly popular development of the business model in recent years as corporations start branching into the homeware market (Kamin, 2023).

The proliferation of the fast fashion business model has been facilitated through the exploitation of a clear set of conditions; (i) the extraditing of the manufacturing processes to third-party facilities in middle- and low-income countries, (ii) the continuing deregulation of corporate conduct, and (iii) the relaxing of social and environmental policies. The labels within garments reflect this as countries such as Bangladesh,

Vietnam, Thailand and China are accredited with the manufacturing of clothing that is predominantly consumed in the Global North. Through moving manufacturing to countries outside of Europe and North America, fast fashion corporations avoid ownership of – and legal responsibility for – the factories within which their products are made, instead utilising third-party manufacturers to produce their garments. This has become a key pillar in the fast fashion business model, as the costs of manufacturing in middle- and low-income countries is significantly lower than in the high-income countries in which they predominantly market their products. Maintaining low production costs by manufacturing products in countries with lower minimum wage standards, higher working hour limits, and laxer legislation around working conditions has become a cornerstone of the fast fashion business model.

Such corporations are greatly economically successful, reporting increasing sales revenues each year. By June of 2023, the UK-based brand Primark boasted a 13% increase in sales and a predicted profit turnover of £2 billion for the year (Sweney, 2023). For the fiscal year ending in September of 2022, Primark reported total sales of £7.7 billion, indicating a 43% increase in sales from the previous year (Retail Insight Network, 2022). For the same period, Swedish retailer H&M reported a 12% increase in sales culminating in \$21.7 billion in net sales (Retail Insight Network, 2023). Meanwhile, Inditex boasted a net income increase of 27% to \$4.4 billion and a staggering \$35.3 billion in sales for only the Zara brand in the 2022 fiscal year alone, leading to an intended 30% expansion of the brand to include further retail spaces and an enlargement of its existing stores (Loeb, 2023). These profits are reported amid the ongoing impacts of inflation and economic downturn, but, despite the widespread impact of this on consumers' lives, the reported levels of consumption and profit continue to rise. As an industry, fast fashion has proven itself to be immensely financially lucrative for the corporations behind the brands and is seemingly immune to the continuing volatility of geopolitical and economic conditions.

In this way, 'fast fashion' has become a term that not only describes the acceleration of clothing manufacturing but also the accelerating rate of clothing consumption. An

estimated 80 billion new articles of clothing are produced globally each year (Bick, Halsey, Ekenga, 2018), with the majority of these being consumed in high-income countries, such as the US and those in Western Europe. In the wake of an accelerating trend cycle, in which the length of time for which a certain style of clothing or a particular garment is seen as being ‘on trend’ is diminishing before the next covetable item emerges, consumers are seduced into a cycle of constant consumption. The marketing efforts of fast fashion corporations emphasise the need for accumulation, with the consumption of products being akin to the expression of identity, the becoming of one’s true self, and empowerment. Whilst the characteristics of the fast fashion industry that have been outlined may well apply to many other corporations manufacturing products that aren’t clothing, it is here that the fast fashion industry is unique. In very few other industries do we witness such an emphasis on the accumulation of quantity of products and with this being marketed as imperative to the expression of identity. Whilst we can see the lowering of manufacturing costs and the increasing rates of product turnover in industries such as personal technological devices, and homeware, we do not witness this same cyclical constant consumption.

8.2 The Social Harms of the Fast Fashion Industry

It comes as no surprise to declare that an international system of mass production that produces billions of dollars in sales annually does so in the wake of immense harms. Mass production does not come without mass harm, and the ultra-fast fashion industry has been widely documented to be inflicting widespread harms not only upon the environment but also upon garment workers and consumers. The harms of the industry are so extreme that the industry has been the subject of countless industry exposés and mass protests in recent years alone and has triggered the founding of numerous organisations who attempt to mediate its impact and to bring accountability to the corporations behind the brand names. Notable non-government organisations (NGOs) at the forefront of this effort include Clean Clothes Campaign, Labour Behind The Label, Good On You, and Fashion for Good – all of whom have a vast research output chronicling

the ongoing harms of the industry. However, whilst the harms of the fast fashion industry are widely documented and knowledge of this continues to grow among the public, there is little recognition of these harms within Critical Criminology. By drawing upon perspectives within the biological sciences, marketing and business studies, consumer studies, and economics, as well as current news media, this section aims to chronicle the harms of the fast fashion industry and bring this to the awareness of Critical Criminology. This section will discuss the environmental harms of the industry, the harm inflicted upon garment workers and the routine human rights abuses that occur, and the often-ignored harms inflicted upon consumers of ultra-fast fashion and those subject to its marketing.

As previously highlighted, ultra-fast fashion is a development and faction of fast fashion, representing a subset of corporations who more widely adhere to the fast fashion business model whilst implementing new strategies. Therefore, the research compiled in this section concerns both fast fashion and ultra-fast fashion brands. Where applicable, distinctions are made between the impacts of fast fashion and ultra-fast fashion predominantly through the naming of certain corporations to distinguish them. Where ultra-fast fashion brands are discussed in these sections, they are prefaced as being ultra-fast fashion to aid reader understanding.

8.2.1 Environmental Harms

The environmental harms of the fast fashion industry have been documented to span the entire lifecycle of each garment, charting the growing of raw materials in the agriculture sector, the manufacturing of the garment itself, and the disposal of the garment post-consumer. It is imperative to recognise the longitudinal nature of the harms caused per garment, as there is no singular aspect of this process inflicting harm that can then be addressed through pinpointed measures and regulation. The cyclical nature of the environmental harms of the fast fashion industry will be explored here; recognising the impacts of a vast agriculture sector geared towards meeting the demand for raw

materials required for mass consumption, the energy usage and emissions produced during the manufacturing of garments, and the issue of waste post-consumer as the lifespan of each garment is diminishing.

Mass production at the level of fast fashion requires huge resources of raw materials, resulting in astronomical land and water usage to meet the demand for raw materials required to manufacture at this scale. Cotton and polyester are the two materials most found within the clothing industry; whilst polyester is synthetic and requires massive resources of oil to produce, having clear environmental ramifications and producing microplastics throughout the garments lifespan (European Environment Agency, 2022), cotton is a natural fibre which is incredibly taxing on land and water resources, as well as requiring large amounts of pesticides to guarantee stable levels of production (Bick, Halsey & Ekenga, 2018). In part due to this, the clothing industry has been found to be responsible for 20% of all pesticide use internationally (McKinsey, 2020) to meet manufacturer demands, with such levels of pesticide use having run-off effects, polluting water sources and inflicting irreversible damage to land resources and wildlife. Such widespread use of pesticides further has a human cost – with high rates of acute pesticide poisoning being reported by agricultural workers within the textile sector, with at least 1 million workers requiring hospitalization each year through adverse health effects as a result of pesticide usage (Environmental Justice Foundation, 2007). The majority of textile agriculture is located in middle- and low-income countries, with India being the world's leading producer of cotton (Environmental Justice Foundation, 2007), meaning that a disproportionate amount of suffering is inflicted upon those within the Global South. Little protective measures are enforced within middle- and low-income countries when working with such toxic chemicals, as there is limited accessibility to protective gear and transparency as to the scale of pesticide use is obscured due to lax regulations.

This vast demand on resources continues into the manufacturing stage of the garment process. Like the agricultural demands highlighted above, the energy consumption required to mass produce billions of garments a year is astronomical and places the

garment industry as one of the most polluting industries internationally. Clothing manufacturing can be seen to contribute to global pollution more than aviation, naval travel, and all other transportation methods combined (Business of Fashion, 2020), being responsible for one fifth of industrial water pollution and 8% of global carbon emissions (United Nations Environment, 2019). The manufacturing process further produces massive quantities of waste; be this chemical waste from the dyeing of fabric or fabric cut-offs following the completion of garments, this waste is rarely correctly disposed of and results in further environmental harm. The failure to correctly dispose of chemicals used in the manufacturing process results in local water sources becoming polluted, damaging natural resources and impacting the health of those living in the surrounding areas (Bailey, Basu, & Sharma, 2022). As stated previously, fast fashion corporations rarely own the factories in which their garments are produced, instead relying on third-party manufacturers to fulfil orders. This allows for the responsibility for the harms of the manufacturing process to lie solely on the shoulders of individual factory owners, avoiding corporate accountability for the waste produced during the manufacturing of their products. Subject to the economic pressures of multi-national corporations, often the first stage of cutting manufacturing costs to meet the demand of fast fashion corporations is regarding waste management and disposal. Multi-national corporations generating billions of dollars in sales annually possess the economic capital that would be required to establish disposal measures to counteract these harms, however the avoidance of factory ownership negates corporate responsibility to do so.

The environmental harms of the industry continue post-consumer, mass consumption at this scale establishes a 'throwaway' culture and attitude toward clothing. This manifests in the regular discarding of garments in the face of the accelerating trend cycle and the accessibility of vast amounts of new clothing as 3 out of 5 garments are disposed of in landfill within a year of their purchase (Clean Clothes Campaign, n.d.). This has vast environmental ramifications, and with the world's landfill sites predominantly located in middle- and lower-income countries, the continuing harms of the industry are rerouted back to the Global South as garments consumed in the Global North are disposed of in landfill sites within the very same countries that they were manufactured (Rodgers,

2015). Measures have been established by NGOs to disrupt this waste cycle, however garments donated to charitable organisations are done so at a rate that surpasses the recycling or resale capacity of the charity in question. Of garments donated to charity, between 40-50% of these are sent to second-hand clothing markets in lower-income countries (Rodgers, 2015), with these clothes being shipped back overseas post-consumer under the guise of a humanitarian effort – with disastrous consequences for the environment and population (BBC, 2021).

These harms are routinely masked by a practice known as greenwashing; being defined as ‘misleading consumers about their environmental performance or the environmental benefits of a product or service’ (Delmas and Burbano, 2011:64) greenwashing is prevalent across the industry. Instances of greenwashing vary in their severity, from the introduction of new ‘sustainable’ product ranges to the claiming of minimal actions as sustainability efforts to fraudulent claims minimising pollution levels from manufacturing. Numerous fast fashion corporations have faced lawsuits in the wake of their extensive greenwashing practices, with Swedish retailer H&M facing charges from Dutch regulatory bodies due to misleading marketing claims as to their environmental impact (Business of Fashion, 2022).

8.2.2 Labour Violations

Violations of human rights and disregard for labour laws are commonplace within the industry. Instances such as the 2013 collapse of the garment factory Rana Plaza in Bangladesh, an incident in which 1,134 people lost their lives and over 2,500 more were injured, have become ubiquitous within calls for industry accountability (Reinecke & Donaghey, 2015a). Numerous fast fashion corporations were found to be operating within the factory, with labels garnering the fast fashion brand names Primark, Matalan, Mango, and Benetton found amongst the factory rubble. The poor structural condition of the building led to the collapse, paired with the presence of heavy manufacturing machinery throughout the structurally unsound building. Structural issues were ignored by factory

management in the face of manufacturing pressures, leading to the fatal collapse of the building whilst garment workers continued to work inside. Families of the workers who lost their lives in the collapse were given the opportunity to claim compensation from fast fashion brand Primark for the loss of their loved ones; however, this was a \$200 one-off payment and to be given upon presentation of DNA evidence that their family member has been killed in the collapse (Deith, 2013). This sparked widespread criticism, not only for compensation of such low monetary value in the wake of many families having lost the primary earner of their household, but also for the requirement of DNA evidence that, due to the limited availability and accessibility to materials required to provide a DNA sample, proved impossible to obtain amongst such devastating structural collapse. Many victims remained trapped under the rubble of the building for days during rescue efforts, and many families lost loved ones without ever having received their remains due to the magnitude and severity of the factory collapse.

However, whilst case studies like this are important in recognising the harms of the industry, the prevailing emphasis on such deadly incidents runs the danger of presenting them as isolated and 'exceptional' tragedies and of distracting from the everyday, ongoing ways in which risks to health mark the routine workings of the global sweatshop regime (Mezzadri, 2017; Mezzadri & Srivastava, 2015). Audits have found workplace codes of conduct commonly flaunted, with workers forced to exceed legal limits of working hours, often being paid far below legal minimum wage, and with child labour still used despite being banned. The lack of health and safety measures means that workers are routinely exposed to fumes and chemicals, with leather tannery workers having a 20-50% greater risk of cancer due to working with the toxic chemicals without protective equipment (The True Cost, 2015). High levels of depression, anxiety, and exhaustion are routinely reported among garment workers (Lynch & Strauss, 2007; Ashraf & Prentice, 2019), whilst the lack of a living wage negatively impacts the health of the workers as the cost of maintaining health is greater than wages earned (McMullen, 2013).

Following the impact of the Rana Plaza collapse, legislation has come into place to prevent similar events (Reinecke, & Donaghey, 2015b). However, these measures have

been widely criticised, both nationally in Bangladesh and internationally by advocacy groups, for focusing only on the Bangladeshi industry, for creating a semi-private system that undermines the state's responsibility to audit factories and protect workers, for failing to account for the vast number of informal garment units, and for further strengthening corporate power by proportioning more control to corporate entities over their business practices (Anner and Bair, 2016; Scheper, 2017). Whilst this opt-in, soft law approach may have been intended to raise labour standards in a deregulated neoliberal market (Tombs & Whyte, 2020) by pressuring corporation to act in a socially responsible manner (Palpacuer, 2017; Sabel et al., 2000), in practice this has proved to be a weak governance system with in-built conflicts of interest. Powerful corporations can appropriate such agreements, further reinforcing the asymmetries of power between international corporations and the nation states from which they source. Such systems continue to allow for quick 'tick-box' approaches to garment worker's health and safety, allowing corporations to continue to avoid accountability for malpractice and to easily sever ties with manufacturers in the event that mistreatment is uncovered. Dynamics of corporate harm continue, and the fast fashion industry represents a grossly under-researched area of corporate crime (Simončič, 2021). This is a distinct harm of globalization (Tombs & Whyte, 2020), with criminological knowledge production remaining focused on the Global North to the comparative neglect of the Global South within which these harms predominantly take place (Carrington, Hogg & Sozzo, 2016).

Furthermore, these harms are disproportionately experienced by women, as more than 85% of garment workers are women (Islam and Zahid, 2012). An estimated 1 in 8 global citizens work in the fashion industry, with approximately 75% of those being women (Common Objective, n.d.). Female garment workers in the top four exporting countries to the United States have wages that are below subsistence levels: average garment wages are only 36 percent of a living wage in China, 29 percent in Indonesia, 22 percent in Vietnam, and only 14 percent in Bangladesh (Workers Rights Consortium, 2011). The wages paid to women garment workers—essential for maintaining a family and household—are so low that they condemn workers' families to lifelong poverty and often a vicious circle of unending debt. Research conducted by the Clean Clothes Campaign

in 2019 found that none of the top seventy apparel companies were paying a living wage to the women workers producing their clothes, despite repeated brand promises to do so. Physical and sexual violence is a common experience among female garment workers, with over 60 percent of Indian and Bangladeshi women garment workers suffer gender-based violence as a daily experience at work (Tithila, 2020).

Research from the Global Fund for Women conducted in 2020/2021 found that in Bangladesh, over 60% of garment workers reported feeling intimidated or threatened with violence at work, in Cambodia, 68% said they were made to feel uncomfortable or unsafe at work, and in Vietnam 34% said they experienced physical harassment at work, ranging from physical to sexual violence. This is violence that stretches beyond the confines of the factory as women also experience harassment and violence on their commute to and from the factory workplace, with these instances often going unreported as hierarchical gender norms allow male bosses to be exempt from punishment and reporting may only increase the abuse. We can also see this gendered violence enacted in the UK. The Office for National Statistics released a report in 2021 that highlighted female garment workers in the UK, many of whom are women of colour and/or are refugees from the Global South, were four times more likely to die from COVID-19 than women in any other occupation. Ultimately it is women paying the fatal price for our cheap clothes.

8.2.3 Harms to Consumers: Constant Consumption

Discussion of the environmental harms and workers' rights abuses of the fast fashion industry are commonplace within sustainability discourse, however the harms faced by consumers themselves are often overlooked. The fast fashion industry has led to higher rates of consumption (Pierre-Louis, 2019), with consumers wearing items less (Remy, Speelman, & Swartz, 2016) due to the accessibility and affordability of mass-produced garments. Further harm is inflicted on consumers themselves through the psychological influence of fast fashion marketing and the emphasis on constant consumerism (Kasser & Kanner, 2004), which has been found to be linked with lower well-being and higher rates

of depression (Dittmar & Kapur, 2011), body-image issues and low self-esteem (Halliwell & Dittmar, 2004; Kim & Lennon, 2007; Koyuncu et al., 2010; Tiggemann & Lynch, 2001; Raghuram, 2023).

However, the harms faced by consumers runs deeper than psychological harms and can be seen to be having a detrimental impacts as to perceptions of price point and relationships to clothing. Clothing has long been a powerful form of non-verbal communication and is fundamental to the expression of identity in daily life (Goffman, 1959; Kaiser, 1990; Niinimäki., 2010; Raunio, 1995), however the impact of the fast fashion trend cycle and the constant battle for the lowest prices has skewed consumer expectations of clothing pricing and quantity and has resulted in consumers becoming unwilling to pay for ethically and sustainably produced garments (Albouy & Adesida, 2018). This is unsurprising, as cheap garments have established a new expected price point per item and have enforced a logic of accumulation which emphasizes quantity over quality of clothing. This alters the relationship consumers have to their clothing, enforcing a damaging cycle of consumption and promoting a throwaway culture in which the value of garments is forever diminishing.

8.3 The Rise of Ultra-Fast Fashion

Within the last ten years the fast fashion business model has undergone a change. With the proliferation of digital devices has come a developed form of the fast fashion corporation with two key differences: (i) the foregoing of the physical retail space to instead operate entirely in an online market, and (ii) the utilisation of social media as the dominant form of marketing and advertising. Not only do these developments allow the new wave of clothing retailer to access a global market, but further allows a greater accessibility to consumer wants, desires, and clothing choices. This emphasis on e-commerce and social media has come with a shifting in market dominance within the clothing industry (Nguyen, 2021), as the new retailers whose presence to consumers is almost entirely digitised are able to maintain even lower costs through their lack of

physical retail spaces – and instead maximise their rates of product turnover and minimise garment costs even more. This development is embodied by brand names that have since become infamous for their ubiquity; SHEIN, Pretty Little Thing, Missguided, and boohoo rival longstanding fast fashion brands in both profit and market dominance.

These retailers have welcomed in a new age of clothing consumption – ‘ultra-fast fashion’ (Brydges, 2024; Dzhengiz, Haukkala & Sahimaa, 2023; Shadel, 2024). The ultra-fast fashion labels signify an intensification of the manufacturing and consumption cycle, as whilst traditional fast fashion retailers may have been introducing hundreds of new garment styles weekly the ultra-fast fashion brand SHEIN is known to introduce new product styles weekly that reach into the thousands (Testa, 2022), listing 1.3 million products a year (Brydges, 2024). Whilst the traditional fast fashion brands boasting cheap clothing prices that were accessible to the average consumer, the ultra-fast fashion brands maintain prices that are eye-wateringly cheap – with the average price for an item from SHEIN being only £7.90 from their website selling over 600,000 items and shipping to over 150 countries internationally (Thomas, Jones & Hooker, 2024). In 2023, SHEIN reported profits of over \$2 billion (Thomas, Jones & Hooker, 2024).

The focus on digital storefronts and social media allows for a greater knowability of consumer demand. The data garnered from consumer clicks and purchases yields instant results about the desires of consumers – to the extent that brands can pre-empt sales before the garments are even made (Good On You, 2024). This has been dubbed ‘real-time fashion’ (Good On You, 2024), as the real-time access granted by social media platforms allows for instant response from the ultra-fast fashion brands who can replicate what is gaining popularity on digital platforms. Cases have been documented which demonstrate just how instant this ‘real-time’ approach is, as a replica of clothing worn by celebrity Kim Kardashian was available to consumers from ultra-fast fashion brand Fashion Nova less than 24 hours after Kardashian was photographed in the original garment (Fisher, 2019). The emphasis on social media marketing has welcomed in the era of a trend-cycle which now lasts days, if not hours. ‘Microtrends’ refers to the accelerating rate at which particular items and styles now come in and out of style

(Beswick, 2024; Copestake, 2022; Zhou, 2022), signifying an intensification of the cycle of constant consumption pioneered by fast fashion retailers and intensified by ultra-fast fashion – to the extent that once a consumer has bought into the trend, the item may have already lost its ‘trend’ status before the parcel has even arrived (Global Fashion Network, 2024).

Fast Fashion	Ultra-Fast Fashion
High Product Turnover	Higher Product Turnover
Low Production Costs	Lower Production Costs
Quick Response Times	Instant Response Times
	E-Commerce Focus
	Digital/Social Media Marketing

Figure 4: Summary of the key pillars of the fast fashion and ultra-fast fashion business models

Whilst the two developments signified by ultra-fast fashion have been adopted by the ‘traditional’ fast fashion brands discussed previously, these attempts to remain competitive in a changing market have yet to yield the same results for the clothing corporations adopting them. H&M, Primark, and Zara, to use the same fast-fashion brands as before, whilst all having branched into the e-commerce market and utilising social media as part of their marketing strategy remain unable to compete with the ultra-fast fashion brands who have used these strategies to achieve market dominance. The accelerating rate of manufacturing and consumption comes with vast implications for environmental sustainability, garment worker labour conditions, and the welfare of consumers. In this way, ultra-fast fashion is a development and faction of the fast fashion industry. To aid understanding, Figure 4 summarises the key pillars of the fast fashion and ultra-fast fashion business models. Having established the context of the ultra-fast fashion industry, these issues must now be addressed.

8.4 Applying Digital Harms

Thus far, this analysis has sat firmly within the bounds of recognising Social Harms. The environmental impacts, psychological and physical harms to garment workers, and the psychological harms to consumers can all be acknowledged and analysed through the Social Harm approach. However, the development of the ultra-fast fashion industry signifies a shift in the digital context which has enabled a slew of digitally-facilitated and digitally-mediated harms to unfurl. This section, in having emphasised the benefit of the Social Harm approach in confronting the fast fashion industry, will now work to develop this framework further by recognising the specific Digital Harms that are unique to an industry, known to inflict mass Social Harm, that is increasingly becoming a signifier of the digital context. In doing so, this section therefore proceeds in two parts; (i) demonstrating how the digitally-facilitated ultra-fast fashion industry extends and intensifies the identified harms, and (ii) how the digitally-mediated context of the ultra-fast fashion industry produces harms to consumers at deeper, internal levels.

8.4.1 Digitally-Facilitated Harms of the Ultra-Fast Fashion Industry

In-keeping with Chapter 7's conceptualisation of digital-facilitation (see pages 151-154), the digitally-enabled ultra-fast fashion industry denotes an extension and intensification of the environmental harms, labour concerns, and harms to consumers that have been discussed thus far. The acceleration of production and consumption that ultra-fast fashion enables brings with it unprecedented levels of environmental harm within the fashion industry and worsening labour conditions for an increasingly expansive garment workforce. The digital presence of these corporations further accelerates consumption practices, with the addictive architectures of online clothing stores, the emphasis on embedded targeted advertising, and the glamourization of consumption all aiding a pervasive cycle of consumption with detrimental implications for consumers. The digital context allows such brands unprecedented access to consumers, and whilst the use of advertising to exert social control is not a new concept (Arrington, 1982) however the rate

of exposure to advertising is increasing through social media (Lee & Hong, 2016), thus this possesses a new value in terms of social control. Social media platforms such as Instagram, YouTube, and TikTok have become the new arena for consumer targeting as online shopping rapidly replaces the high street.

When seeking to evidence these impacts, no ultra-fast fashion corporation exemplifies this like SHEIN. Having rapidly become a household name in recent years, the expansion of the ultra-fast fashion brand has often been the subject of controversy. As previously discussed, the SHEIN website boasts upwards of 600,000 products with an average price of only £7.90 per garment (Thomas, Jones & Hooker, 2024). In the 2023 fiscal year, SHEIN reported profits upwards of \$2 billion, with a gross merchandise value of \$45 billion (McMorrow, Ollcott, Ruehl & Levingston, 2024). Such affordability for the average consumer has enabled SHEIN's rise to dominance within the clothing industry, developing a cult following of consumers seduced by insidiously low prices. SHEIN's business model is centred around 'on-demand' production, the cornerstone of which is digitally-enabled data collection and analysis to determine consumer demand for certain garments and styles. An infographic from SHEIN's website (n.d.), depicts their 'digitally-empowered' business model. From this infographic, it is clear the instrumental role that the digital plays in enabling SHEIN's industry dominance – audience engagement and the analysis of customer feedback and purchases denotes pervasive analysis of consumer behaviour to maximise profit, echoing the mechanisms of social control highlighted by Zuboff (2019a).

This digital emphasis is not unique to SHEIN alone but echoed across the ultra-fast fashion industry. The financial success of a business model built upon the surveillance and analysis of consumer behaviour has enabled the industry to reach and maintain dominance in consumer attention – with the repercussions of this to be discussed further in the following section. The digitally-facilitated elements of this business model are clear; without the digital accessibility of consumers, ultra-fast fashion brands such as SHEIN would struggle to achieve the levels of consumer attention that is evidenced in their revenues and digital presences.

The digital presence and social media marketing further the digitally-facilitated harms inflicted upon consumers, comprising a myriad of manipulative mechanisms instilled in the ways consumers interact with ultra-fast fashion brands. The addictive digital architectures of social media platforms have been adopted by ultra-fast fashion brands to form a gamification of consumption (De Canio, Fuentes-Blasco & Martinelli, 2021). Implementing infinite-scroll webpages and points systems for purchasing products utilises the very tactics pioneered by social media platforms to increase user engagement, and discounts and sales featuring timed countdowns instils a sense of urgency to consume before the countdown ends. The use of targeted advertising entices consumers further into a cycle of constant consumption (Mahmood, 2022), as the data garnered from consumer behaviour enables products to be marketed as efficiently as possible and toward guaranteed purchase outcomes. The use of social media marketing, and the role on ‘influencers’ and ‘content creators’ as those who have amassed a large following on digital platforms, allows advertising to become seamless and, at times, undetectable. This serves to create a normalization and glamourization of overconsumption (Latifi, 2024) in which consumer ideals of material ownership are warped by images and videos depicting large swathes of garments – often with these having been given to the influencer for free whilst they’re being paid to ‘produce content’ of themselves wearing the products.

However, the digitally-facilitated harms of the industry are not evidenced in consumer impacts alone. The rate of production and consumption that digital-facilitation has enabled comes with devastating material impacts for the environment and the precarious workforce within the industry – unprecedented levels of garment manufacturing further accelerates the previously explored environmental harms of the industry and raises further concerns for the welfare and labour conditions of garment workers. Whilst the fast-fashion industry was known for its mystification of its manufacturing practices, and the environmental and labour ramifications of this, the ultra-fast fashion remains shrouded in further levels of obscurity. Sustainability advocacy group Fashion Revolution conduct yearly research to determine the transparency of fashion brands’ manufacturing

the labour practices, including luxury, fast-fashion and ultra-fast fashion brands in their analysis. The Fashion Transparency Index 2023 (Fashion Revolution, 2023) ranks ultra-fast fashion brands SHEIN, boohoo, and Pretty Little Thing poorly for their manufacturing transparency, highlighting these brands as making very little information available to consumers regarding their manufacturing practices. It is important to note that these brands are not significant in their lack of transparency, but instead sit within an index of 250 fashion brands that demonstrates a similar opacity regarding their practices. However, the comparative rates of production give these findings their significance. The mystification of corporate practices that produce thousands of new products weekly raises significant concerns for the unknown environmental ramifications and labour conditions behind this.

Information regarding the environmental impacts of ultra-fast fashion brands is scarce, pairing a lack of transparency with a difficulty in determining culpability amid manufacturing practices that negate corporate responsibility. Therefore, determining the environmental impacts of the ultra-fast fashion business model is impossible when attempting to assess the practices of the thousands of factories being operated within and the silence from corporations who refuse to make this information public. In 2021, SHEIN published their first Sustainability and Social Impact report. What little data was made available was bleak, and the report has since been removed from the brand's website. The report stated that SHEIN's contribution to air pollution amounted to an estimated 6.3 million tons of carbon dioxide in 2021 alone, with almost all of its impact taking place in its supply chain (Gamino, 2024; Kent, 2022) and that only 2% of its factories and warehouses met the brand's guidelines for worker safety (Brydges, 2024). Despite having been founded in 2012, this report marked the first time SHEIN assessed its global impact. That the report has since been removed from the brand's website evidences the impenetrability of the ultra-fast fashion industry, and the ability of corporations to obfuscate their impacts.

Where impacts can be concretely evidenced is in the realm of labour conditions and worker safety. SHEIN has recently been the subject of numerous exposés regarding the

poor working conditions and routine disregard for labour regulations in their factories (Channel 4, 2022; Seale, 2022; Waheed, 2022) – with garment workers forced to work 75 hours a week in warehouses that operate 24 hours a day, 7 days a week with only one day a month being taken off work (Edwards, 2024). The average monthly wage for SHEIN garment workers is reported to be the equivalent of £265 a month after deducting overtime pay, far below the £719 living wage in China (Edwards, 2024). From this, we see a direct link to the ‘digitally-empowered’ business model discussed above; with such an emphasis on quick response times and real-time availability of in-demand products comes a workforce that must always be available to manufacture the garments gaining popularity in the digital space. As a digitally-facilitated harm, we witness the direct material harms to garment workers because of the digital context and a business model centred around the maintaining of consumer attention. This further brings our attention back to the reports concerning ultra-fast fashion brand boohoo during the COVID-19 pandemic, in which garment workers were illegally forced to work during a localised lockdown in 2020 (see page 171). What continues to be emphasised here is the material, human harms of a digitally-facilitated system, obfuscated by an opacity of corporate activity and the disembodied mechanisms through which consumers engage with ultra-fast fashion brands.

Following a wave of damning publicity regarding worker safety in 2023, SHEIN sought to salvage its reputation through social media marketing by enlisting a group of social media influencers to visit one of its factories in Guangzhou (Ng, 2023). The images of a pristine factory and smiling workers assisted by robotic order-packing machines sit in drastic contrast to the images garnered from Channel 4’s undercover footage depicting cramped factory floors and exhausted workers (Channel 4, 2022). This juxtaposition of imagery further obfuscates the manufacturing practices of the brand, as digitally-facilitated marketing aimed at neutralizing consumer concerns by outsourcing corporate public relations to social media influencers instead triggered backlash for SHEIN and its brand endorsers alike (Michie, 2023) – albeit with more of the negative attention targeted at the social media influencers (Mendez, 2023).

8.4.2 Digitally-Mediated Harms of the Ultra-Fast Fashion Industry

In Chapter 7, digitally-mediated harm production was outlined to be a necessary functioning of the digital context (see pages 154-157). Through this conceptualisation, the harms produced are inflicted at deeper, internal levels to the individual and thus presented methodological difficulties in solidifying a framework of Digital Harm. Whilst having described digitally-mediated harms as those that intervene in, obstruct, and undermine human autonomy in the wake of digital technologies, the explicit forms that this may take has yet to be outlined. Furthering our understanding of the ultra-fast fashion industry, we can begin to identify the ways in which digitally-mediated harm production is a necessary functioning of this business model and the wider context in which it is situated. The operations of the ultra-fast fashion industry that have been explored are symptomatic of the digital context; without the affordances of digital technologies granting greater access to the behaviours of consumers, the predictive, real-time production business model could not function. The implications of this for consumer agency and autonomy shall be outlined here; with distinct attention given to the ways in which the digital, as outlined in Chapter 7's conclusion (see pages 157-160), necessitate these harms as a vital facet of profit generation in the ultra-fast fashion industry.

The ultra-fast fashion industry is the *dematerialised* development of fast-fashion for the digital context. The dematerial presence of the digitally-mediated ultra-fast fashion industry further mystifies consumer awareness and knowledge of corporate conduct, erasing the presence of the physical and material costs of each garment's manufacturing. As Chapter 6 describes using Cloud storage (see page 143), the material infrastructure of the ultra-fast fashion industry is obfuscated from consumer awareness amid digital storefronts – with even the foregoing of the physical retail space rendering clothing quality and the material signs of the human labours behind each garment as removed from consumer awareness until garment orders are delivered. The physical reality of each garment as a material object is abstracted in the digitally-mediated context. Whilst the physical retail spaces of fast-fashion served as a removal from the manufacturing spaces in which garments were produced, this is further obfuscated by a

dematerial removal of the physicality and the human and environmental costs of each product. Even within the physical retail spaces, consumers were faced with a material artefact as evidence of the fast-fashion business model. Ultra-fast fashion denies the opportunity to witness this evidence until ownership of the garment has already been established, denying consumer access to the material product and the implications of its creation until they have already entered the fold of brand customer.

This demateriality and denial of access becomes more sinister when considering the key role that consumer data has in the ‘digitally-empowered’ business model depicted on SHEIN’s website (n.d.). Considering the vitality of consumer data analysis to the operating of this business model, to purchase a product from the ultra-fast fashion brand translates to the consenting of one’s data to be analysed and utilised for not only product refinement, but further for prediction of future consumption behaviour and the ability to influence this algorithmically. By utilising the dematerialised digital space, the ultra-fast fashion brand denies consumers the opportunity to purchase clothing without entering into the system of data commodification – one must exchange personal data for the access to clothing. This is not to say that consumers do not have options that lie outside of the ultra-fast fashion business model and are only able to buy clothing by entering this system. However, as this business model continues to be integrated into the operations of the fast-fashion brands first discussed in this section, the opportunities to do so are diminishing for consumers whose financial circumstances necessitate purchasing clothing from these brands. The affordability and accessibility of e-commerce only ultra-fast fashion often serves to ensure they are the dominant option for consumers to acquire garments, with this itself serving as a mechanism by which consumer choice is limited. This affordability is often the defence given when the ultra-fast fashion industry is critiqued, and it is important to situate this within the context of austerity and economic decline in which consumer disposable income establishes ultra-fast fashion as one of the only affordable choices for clothing – positioning clothing consumption practices and environmentalism as inherently tied to classism (Bell, 2020; Redmond, 2021). Therefore, through this we witness a limiting of consumer choice that surpasses the rate at which fast-fashion reached market dominance twenty years before.

The background non-use relation of digital technologies – or digital unconscious (see page 147) – sees the process of access to and analysis of consumer behaviour as pervasive. As was outlined by Zuboff (see Chapter 2, pages 34-48), the process of data collection utilised within the ‘digitally-empowered’ business model of ultra-fast fashion is constant and unobstructed, as ultra-fast fashion increasingly reaches market dominance amid the digital context. The vitality of consumer data analysis and targeted marketing through algorithmic influence for the ultra-fast fashion brand cannot be understated; whilst labelled as ‘Audience Engagement’ in SHEIN’s infographic of their business model (n.d.), consolidating this with Zuboff’s framework contextualises this as an example of the pervasive surveillance of user activity and behaviour described through SC. This research has previously utilised the works of Brusseau (2019; 2020; see page 56-59) to understand the implications of this for the development of identity, emphasising the dissection and consolidation of human identities to serve algorithmic influence. Within the context of ultra-fast fashion, this forms part of the non-use background relation consumers have with the digital as data is continually collected and analysed to serve the expansion of market dominance through behaviour prediction and the funnelling of consumer choice toward guaranteed purchase outcomes (Zuboff, 2019a). To be broken down into a knowable set of interests and demographics that can be efficiently marketed to impacts the construction of self and understandings of identity (Brusseau, 2019), and with these very interests and attitudes that shape identities being subject to hidden influence, we begin to see the digitally-mediated harms this system produces.

Clothing comprises one of the most powerful forms of non-verbal communication, as the ways in which we dress convey to others our personalities, our emotions, our state of mind, founding a key part in the everyday formation and communication of our identities (Kaiser, 1990; Raunio, 1995). This key pillar of identity formation and self-expression is fuel for profit generation within the ‘digitally-empowered’ ultra-fast fashion industry. Decisions of self-expression and identity formation are negated by an algorithmically defined storefront and targeted advertising which serve to bypass consumer awareness,

with even a rejection of this providing fodder for the refinement of algorithmic influence. It is necessary here to return to the Preface of this thesis (see pages xiii-xviii), as from the attempts at fieldwork for this research the digital presence of ultra-fast fashion became inescapable. Compiling the research for this case study produced the same results – even without purchasing a product, collating information regarding ultra-fast fashion made its digital presence ubiquitous. The ability to present one’s own identity as we wish is a vital facet of self-actualization, with the obstruction of this comprising a key form of relational harm (Pemberton, 2016). As has previously been discussed in Chapter 1 (see pages 26-31), Pemberton defines relational harms as ‘harms resulting from enforced exclusion from social relationships, and harms of misrecognition’ (2016:30). Within the context of ultra-fast fashion, we begin to see a reframing of relational harms through which the individual faces forced exclusion from their own identity construction and misrecognition in the wake of prediction and identity commodification. This moves the focus of the ‘relational’ away from an externalized conceptualization and allows this to consider the relation to the self. Ultra-fast fashion’s algorithmic influence directly interferes with and obstructs the formulation and presentation of self, manipulating user choice toward guaranteed purchase outcomes. This is not an inherently new concept and is not a mechanism unique to the ultra-fast fashion industry, as persuasive marketing has long been a tool utilized by corporations to sway consumer choice. However, the point of departure lies with the knowability and behaviour modification now possible within the ‘digitally-empowered’ business model of ultra-fast fashion and the SC context.

In the discussion of the technology-crime nexus (see pages 117-123), a critical lens was turned to the conflicting role of digital technologies in rehabilitation programmes (see page 120). Whilst technologies being integrated into rehabilitation has been seen as enabling digital literacy in those who are incarcerated and providing opportunities to maintain connections to loved ones (McKay, 2022), a contradiction emerges concerning predictive digital technologies being utilised for programmes centred around positive change and future action when such technologies produce search results and targeted advertising based on historical behaviour (Kaun & Stiernstedt, 2019:19). A similar discussion point is raised by Vallor’s discussion of AI (2024) and the issues this presents

for the continuation of knowledge production and imaginative alternatives, as AI outputs are based on the vast data sets the model has been trained with and thus these outputs signify a regurgitation of data based on a historical precedent of behaviour and information. The issues raised in this discussion can be further applied to the ultra-fast fashion industry; as the prediction models of the business model are based on consumers' historical behaviour, producing outputs that maintain a plateau of identity formation and development, and obstruct opportunities to move beyond this. Continually advertising products similar to those the consumer has previously purchased or searched for maintains a predictable identity to be marketed toward, refining algorithmic influence and enabling guaranteed purchase outcomes. The prediction model outlined by Zuboff continues to produce results based on historical behaviour, obstructing consumer opportunities for the autonomous self-actualization that Pemberton describes (2016).

Where this leads us is to a recognition of digital technology's ontological force in the context of the ultra-fast fashion industry. Chapter 7 established the ontological force of digital technologies as able to undermine and overpower user agency, with this comprising a necessary functioning of the digital context (see pages 151-153). The discussion of digitally-mediated harm has thus far hinted at, but not explicitly stated, the issue of consumer agency amid a digitally-mediated ultra-fast fashion industry. The limitation of consumer choice has long been discussed within the bounds of corporate harm (Tombs & White, 2020), however what digitally-mediated harms within the context of ultra-fast fashion means for this agency is an undermining of consumer agency in the wake of increased causative agency from the digital infrastructure housing the ultra-fast fashion brand's presence. Agency within the ultra-fast fashion space is routinely undermined; the previously discussed manipulative tactics of addictive architectures and the instilling of a sense of purchase urgency amid time limited discounts play a role here, as does the plateauing of identity development through predictive technologies. However, the digital ontological force cannot be limited to these mechanisms alone in the ultra-fast fashion context. The presence of the ultra-fast fashion brand is not a neutral digital entity but is imbued with a profit generation motivation, and the causative agency

to enable this. The ability to do so directly signifies the routine undermining of consumer agency and autonomy amid a digital technology which effectively predicts and funnels behaviour toward continued data collection and purchase outcomes.

Zuboff overtly labels this as the process of algorithmic systems creating ‘organisms that behave’ (2019a:377), as digital systems allow corporate management of individualized consumer subjects (Darmody & Zwick, 2020). This further raises issues for the concept of consumer autonomy in the digital context, drawing us back to the prevalence of ‘perceived autonomy’ in the digital marketplace (Wertenbroch et al., 2020) and further toward the impossibility of differentiating authentic acts of agency from those that are algorithmically determined (Yeung, 2018b). The increasing corporate control over consumer choice contexts (Yeung, 2018b) can be directly evidenced in the ultra-fast fashion context, as the choice architectures afforded to consumers present an increasingly diminishing plethora of options available. The hyper-personalised digital interface through which ultra-fast fashion brands are accessed creates an illusion of choice yet have become a consumer expectation (Lindsey, 2023), as algorithmically defined product selections present seemingly infinite options to consumers amid a narrowing of the choice context being afforded.

Further to this, as Yeung (2018b) highlights, the increased accessibility of consumers through digital technologies enables attention to be diverted and demanded through ‘nudge marketing’ mechanisms. Utilising a digital technology’s ability to notify its user of messages and alerts, the ‘nudge’ creates the ability to capture user attention at any given moment. The ability to garner consumer attention in real-time enables the success of the ‘digitally-empowered’ business model; as digital affordances enable the creation of real-time demand and capturing of consumer attention. This signifies the disappearance of marketing, in the wake of marketing tactics being able to extend through consumers’ lives without limit and obstruction (Darmody & Zwick, 2020). Signifying the collapse of the distinction between algorithmic influence and consumer autonomy, we return to the loss of individual freedoms Zuboff emphasises as a direct form of digitally-mediated harm that can be evidenced in the ultra-fast fashion context. The ability to determine

autonomous consumer behaviour amid ultra-fast fashion's ability to demand and funnel consumer attention and choices is impossible amid a myriad of manipulative digital mechanisms, however this precisely evidences the digitally-mediated autonomy harms in action. The collapsing of the distinction between autonomy and manipulation exemplifies the overpowering ability of the digital (Keymolen, 2020) and the routine intervention in, if not obstruction and undermining of, consumer agency.

However, most insidious to the discussion of the digitally-mediated harms of the ultra-fast fashion industry is Chapter 7's assertion of digitality as being enforced and inescapable (see pages 154-156). Whilst users may be able to disengage from their digital technologies for a short period of time, they must be returned to in order to participate in society (Kuntsman & Miyake, 2022). The necessity of returning to the digital enables the constant expansion of the ultra-fast fashion industry. As a business model entirely enacted through the digital sphere, the enforcement of the digital's presence in our existence translates to an ultra-fast fashion presence that may always be asserted. Digitality enforcement ensures that consumers are always available to the presence of ultra-fast fashion; hyperconnectivity denotes that our devices are never too far away from us, and as such ultra-fast fashion's ability to assert its presence is never obstructed. Zuboff highlights SC as a capitalist market rigged for constant expansion, nowhere is this more evident than in the application of enforced digitality.

8.5 Conclusion

This chapter has proven the ultra-fast fashion industry a valuable case study through which to conceptualise digital-facilitation and -mediation. The value of this originates from the ability to compare the Social Harms of the fast fashion industry with the emergent Digital Harms stemming from the ultra-fast fashion development. Through this comparison, it becomes clear not only the distinctions in business practices but further the manifestations of harm that emerge from these different contexts. In this context, digitally-facilitated harms manifest as the intensification of Social Harms; those impacting the psychological and emotional wellbeing of both garment workers and

consumers, environmental harms through accelerated production and consumption, and the physical harms inflicted upon garment workers through ‘real-time’ production business models. What delineates digitally-facilitated harms from the Social Harms identified within fast fashion is the intensification of these. It is here that the ultra-fast fashion context provides valuable contributions in cementing the distinctions of the digital context, as it is through the digitally-enabled business models that production and consumption have become accelerated and intensified. However, it is within the frame of digitally-mediated harms that the ultra-fast fashion industry’s original contribution truly comes to the fore. In applying digital-mediation to the ultra-fast fashion industry, the effects of digitality become evidencable within the case study.

Furthermore, three key forms of digitally-mediated harm are found: (i) self-relation, (ii) agentic, and (iii) autonomy. Through investigating the ultra-fast fashion industry’s data collection practices, the intervention in identity formation and expression through clothing began to materialise. Utilising Pemberton’s relational harms (2016), a process of alienation from the self began to emerge in which the hyper-personalised shopping environments of ultra-fast fashion became a behaviour prediction mechanism which serves to intervene in consumer’s sense of identity and expression of this. The emphasis on microtrends within the ultra-fast fashion industry accelerates the constant cycle of consumption implemented by the fast fashion industry, with addictive digital architectures featuring infinite scroll and endless discount opportunities further enforcing the action of consumption through perceived urgency, whilst the constant production of new products further increasing the disposability of garments and encouraging throwaway fashion. The impacts of this for consumer action is evidenced in consumption practices and increasing rates of garment disposal, with this all contributed to a cycle of environmental harm. Most notably, however, the ultra-fast fashion industry was seen to intervene in, obstruct, and undermine consumer autonomy as routine practice. The disappearance of marketing and the proliferation of algorithmically-defined digital spaces presents a complicated environment in which to attempt to differentiate digital manipulation from autonomy – with the impossibility of doing so forming a key signifier of the need to investigate this further.

Whilst only providing a brief overview of the manifestations of digitally-mediated harms here – as these shall be expanded upon fully in Chapter 9 (see pages 197-201) – this draws our attention to further concerns raised throughout this case study. The diminishing opportunities for consumers to purchase clothing that does not necessitate the collection and commodification of data raises key questions for resistance tactics in the digital context. Since Chapter 3's discussion of Zuboff's underdeveloped approach to resistance (see pages 71-72), it has been clear that a great understanding of what forms resistance can take is needed. From the case study, this has become even clearer. Despite rising consumer awareness of the harmful impacts of ultra-fast fashion, brands routinely boast higher profit margins each year as production and consumption rates continue to increase. Utilising data from numerous industry exposés, from investigatory documentaries to user outrage on social media, this creates an understanding of the industry as being impervious to consumer critical awareness. The work of numerous sustainability initiatives has been utilised within this case study, all of which presents ways for consumers to consume garments that do not contribute to environmental harm and poor working conditions for garment workers. However, in recognising enforced digitality and the ontological force of digital technologies, and in drawing upon my own experience in digital spheres during and after the data collection period of this case study, the refusal to consume these products does not negate the brands' abilities to be advertised to the user. As I emphasised through my own experience in the Preface (see page xiii-xviii), there is no 'opt-out' option for consumers who do not wish to contribute to this data collection and there is no control to be regained over one's digital space. The ultra-fast fashion industry provides an exemplary case through which to witness the struggle for resistance, however our discussion of resistance must be firmly situated within the wider digital context. This therefore necessitates a move away from the ultra-fast fashion industry to fully understand the ramifications of digitality for user resistance practices and explore the barriers to resistance that materialise both within and outside of the ultra-fast fashion industry.

Conclusion to Part 2

After establishing the methodology and research design in Chapter 5, Part 2 of this thesis sought to answer the following research questions:

- 1. How has Critical Criminology previously engaged with harmful human-technology relations?**
- 2. How has Postphenomenology been utilised in conceptualisations of harm?**
- 3. To what extent can a distinction between the technological and the digital be drawn?**
- 4. How can this then be used to consider a digitally embedded approach to harm production?**

In seeking to answer **RQ1**, Chapter 6 explored Critical Criminology's engagement with technology through the lenses of technology-facilitated violence (Henry & Powell, 2018; Mitchell et al., 2022), predictive policing (Sandhu & Fussey, 2021; Williams & Clarke, 2016; 2018), incarceration technologies (Kaun & Stiernstedt, 2019; McKay, 2018a; 2018b, 2020), and AIC (Hayward & Maas, 2021). From these discussions we can begin to understand that Critical Criminology assumes a position of social determinism when considering technology's utilisation; in which human actors are seen to use technology to inflict or prevent harms. Between this position and the technological determinism inherent with SC, a dichotomy forms in which either human or technology are assumed to have greater agency over the other. Exploring RQ1 also revealed a crime-centric focus within the work, as understanding of technology is used in the committing or prevention of crimes takes precedent over understanding how harms are produced by technologies.

Moving beyond this approach, **RQ2** looked to engage with works within Postphenomenology to establish a deeper understanding of human-technology relations before exploring how this has been engaged with within Critical Criminology. Exploring Postphenomenology expanded our understandings of agency within human-technology relations, providing an overview of theoretical approaches which view this dynamic differently. Whilst extension theory was found to uphold social determinism, actor-

network theory assumed a neutral balance of agency between human actor and technology. This further allows for the causative agency of technologies to be recognised and the ways in which technologies influence human behaviour. Despite this, Postphenomenology was found to assume neutrality of the technologies in question; viewing technological artefacts as neutral actors as opposed to those imbued with a profit generation motive as Zuboff conceptualisation. Turning this lens toward how Postphenomenology has been utilised in studies of harm directs us towards the work of Wood (2021; 2022; Wood et al., 2023) in which a typology of harms emanating from human-technology relations is conceptualised. The value of this typology to this research cannot be understated, as this serves to solidify the relevance of human-technology relations to studies of harm beyond the scope of this thesis. Wood's work reveals further opportunities to utilise Postphenomenology towards an understanding of Digital Harm, necessitating that distinctions between the technological and the digital be drawn.

Investigating **RQ3** produced the following findings that distinguish the digital from the technological:

1. The digital is *dematerial*, operating through materiality but secondarily, abstractly, and often invisibly.
2. The digital is a *twofold use-relation*, inclusive of the technological use-relation and the use-relation to digital systems.
3. The digital is also a *non-use* relation, a pervasive background relation of digitality, forming a 'digital unconscious'.
4. The digital has a distinct agency, non-neutral and geared toward data collection, and *ontological force*, whether one has entered into a use-relation with it or not.

This provides an important understanding of digital technologies that moves beyond social and technological determinisms to recognise dynamics within human-digital

relations and further recognises the causative agency of the digital technologies themselves, consolidating Zuboff's work with Postphenomenological conclusions and Wood's work to form the foundations of a Digital Harm approach.

This is furthered in the answering of **RQ4**. Having established technological/digital distinctions through RQ3, we move towards an understanding of digital-facilitation and digital-mediation. This preliminary framework provides a foundation upon which to construct the Digital Zemiology approach, creating a two-pronged form of analysis and a layered approach to harm production. In conceptualising digitally-facilitated harms as those evidencable within the social realm and digitally-mediated harms as those produced at a deeper level of the human experience, the task of understanding the manifestations of Digital Harm also becomes a methodological one with significant barriers to overcome.

Chapter 8's case study turns our gaze towards the digital context of the ultra-fast fashion industry. This case study formed a valuable context through which to investigate digitally-facilitated and digitally-mediated harms. This provided insight into how digital technologies facilitate the intensification of Social Harms through increased efficiency of harm production. Furthermore, digitally-mediated harms allowed this analysis to look beyond the social realm and begin to formulate harms that are specific to digital-mediation. In doing so, this revealed distinct cognitive harms being inflicted through digital-mediation concerning human identity, asymmetries of knowledge about the self, agency and behaviour, and the undermining of autonomy to serve profit generation.

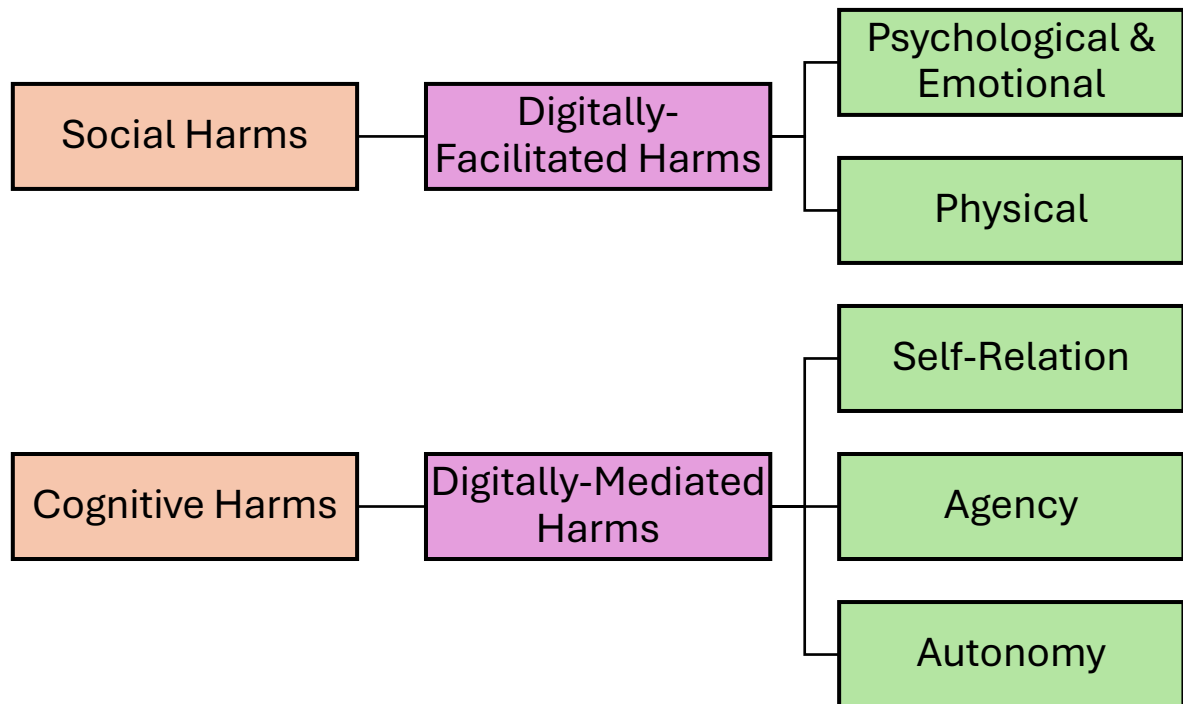


Figure 5: Developments to the Digital Zemiology framework based on Part 2's analysis

Part 2 of this thesis sought to establish the foundations of the Digital Zemiology approach, through a recursive practice and interdisciplinary lens. Throughout this process, key concepts of digitally-facilitated and digitally-mediated harms have been identified and distinctions drawn between the digital and the technological. Figure 5 reflects the developments made to the Digital Zemiology framework in light of Part 2's discussions, with forms of digitally-facilitated and digitally-mediated harms beginning to materialise from Chapter 8's case study. Moving forwards Part 3, this research shall seek to further explore the ramifications of these emergent harms. This shall form the foundational understanding of Digital Harm as a concept, lending itself to discussions of resistance.

Part 3:

IMPLEMENTATION & IMPLICATIONS

Chapter 9: A Framework of Digital Zemiology

This chapter concerns the forming of the Digital Zemiology framework, as an implementation of Digital Harm. Having utilised the ultra-fast fashion case study to apply digitally-facilitated and digitally-mediated harms, evidence was found to support the intensification of Social Harms through digital-facilitation, whilst further highlighting the emergent harms stemming from digital-mediation. These harms are evidenced within the case study, however a concise overview of the ways these manifest within the ultra-fast fashion context will be provided here. Following the case study, it further becomes necessary to revisit abductive analysis (Timmermans & Tavory, 2012; 2014; 2020) to reflect on how this has been implemented and the benefits this has brought to this research as it moves toward theory generation.

However, this chapter primarily concerns the solidifying of the Digital Zemiology framework. The ultra-fast fashion case study has been instrumental in uncovering how the impacts of digital-mediation manifest beyond the social realm, having allowed for a deeper understanding of how digital systems are embedded within the ultra-fast fashion business model and the central role surveillance plays in capital accumulation. From this position, Digital Zemiology begins to take shape as a theory of harm production that operates at two levels: the social and the cognitive. In speaking to the harms implicitly discussed by Zuboff (2019a), those within Surveillance Studies (Haggerty & Ericson, 2000; Lyon, 2002; 2007; Murakami Wood, 2007), and explored within Wood's work unifying Zemiology with Postphenomenology (2021; 2022; Wood et al., 2023), the Digital Zemiology framework forms a comprehensive model unifying the insights from an interdisciplinary approach and in light of a real-world application.

This chapter therefore proceeds in three parts; (i) drawing conclusions from the ultra-fast fashion case study, (ii) consolidating these conclusions into a theory of Digital Zemiology, and (iii) discussing the limitations of this approach.

9.1 Case Study Conclusions and Theory Generation

In seeking to develop a framework of Digital Zemiology, the ultra-fast fashion case study has produced several key insights that corroborate the applicability of digitally-facilitated and digitally-mediated harms, serving to unify these concepts towards a theory of Digital Harm. This section shall first provide a concise overview of the insights gained from the case study application; in which Social Harms can be seen to be intensified through digital-facilitation, and digitally-mediated harms manifest at the level of cognition impacting user self-relation, agency, and autonomy.

Secondly, the process of abductive analysis for theory generation is revisited to reflect on its implementation before moving toward a theory of Digital Zemiology. In having utilised abductive analysis (Timmermans & Tavory, 2012; 2014; 2020), the case study application has been able to produce insights across the temporal contexts in which this research has taken place and has allowed this to be reflected upon as the case study has progressed. This section will reflect on the merit of having situated the development of Digital Zemiology within a range of theoretical perspectives and having utilised this toward an interdisciplinary framework.

9.1.1 Insights from the Ultra-Fast Fashion Industry

The ultra-fast fashion industry provided an exemplary case study of a digital context-specific industry, an industry whose expansion and acceleration are entirely digitally-facilitated and is furthered by the digitally-mediated lives of consumers. The development from fast to ultra-fast fashion is symptomatic of digitality; as the business

model of fast fashion adapted to digitalisation by adopting a dematerialised presence and incorporating surveillance mechanisms into the very foundations of its operations.

Through digital-facilitation, the intensification of environmental, labour, and consumer harms were evidenced (see pages 175-180). The developments seen between fast and ultra-fast fashion enables an increased rate of production, evidenced in the thousands of new products released weekly by ultra-fast fashion brands in comparison to the hundreds released by fast fashion's market dominators (see page 176). Such an aggressive acceleration in manufacturing, paired with the lack of transparency from ultra-fast fashion brands (see pages 178), casts insidious implications for the environmental impacts of the industry. The 'real-time' production model requires a garment workforce that is always available, with the ramifications of this being evidenced in the routine exceeding of legal working limits and lack of non-workdays among the workforce (see pages 177-178). The cycle of consumption is increased through the digital accessibility of ultra-fast fashion; the rate at which consumers encounter targeted advertising (Aslan Oğuz, Strle, & Košir, 2023), the emphasis on 'microtrends' (Beswick, 2024; Copestake, 2022; Zhou, 2022), and the hyper personalised, algorithmically defined presentation of products (Lindsay, 2023) makes this consumption cycle constant, whilst further encouraging the rapid disposal of garments as styles that are deemed covetable change rapidly (Williams, 2022). The psychological impacts to consumers of the fast fashion industry are equally intensified, with increased rates of anxiety and depression linked to the cycle of clothing consumption and body-image issues seen to stem from increased rates of exposure to advertising and the image-based currencies of social media influence (Karsay et al., 2021; Saiphoo & Vahedi, 2019; Vandenbosch et al., 2022; Wilksch et al., 2020).

However, it is through digital-mediation that the deeper nuances of the ultra-fast fashion industry come to the fore. It is through this lens that we begin to find evidence of the undermining of autonomy and intervening in and obstruction of user agency in the digital context, whilst further obstructing relation to the self. Self-relation harms manifest in the hyper-personalised, algorithmically-defined dematerial environment of the ultra-fast

fashion industry; spurring clothing consumption through the manipulation of modes and methods of identity formation and expression. The agentic harms of the industry encompass those elements of the business model which directly manipulate and funnel consumer action; obstructing and intervening in the decisions consumers make. This can be seen to span the addictive architectures of online shopping platforms (see page 177) and the limiting of consumer choice through the mechanisms employed to maximise affordability and accessibility of the brand – skewing consumer expectations and ideals of garment cost and ownership. Finally, ultra-fast fashion poses a threat to consumer autonomy through its real-time ability to demand and commandeer consumer attention, undermining autonomous choice through algorithmically-defined targeted advertising, and the expansion of these marketing tactics throughout consumers' lives without limit or obstruction (Darmody & Zwick, 2020).

These key points represent vital developments to Zemiology for the digital context, with the ability to recognise these forms of harm producing further opportunities for critical enquiry. Figure 6 summarises the digitally-facilitated and digitally-mediated harms identified through the ultra-fast fashion industry. This emphasises the different domains in which harm is being produced in the digital context; the familiar realm of the social, the unfamiliar terrain of the cognitive.

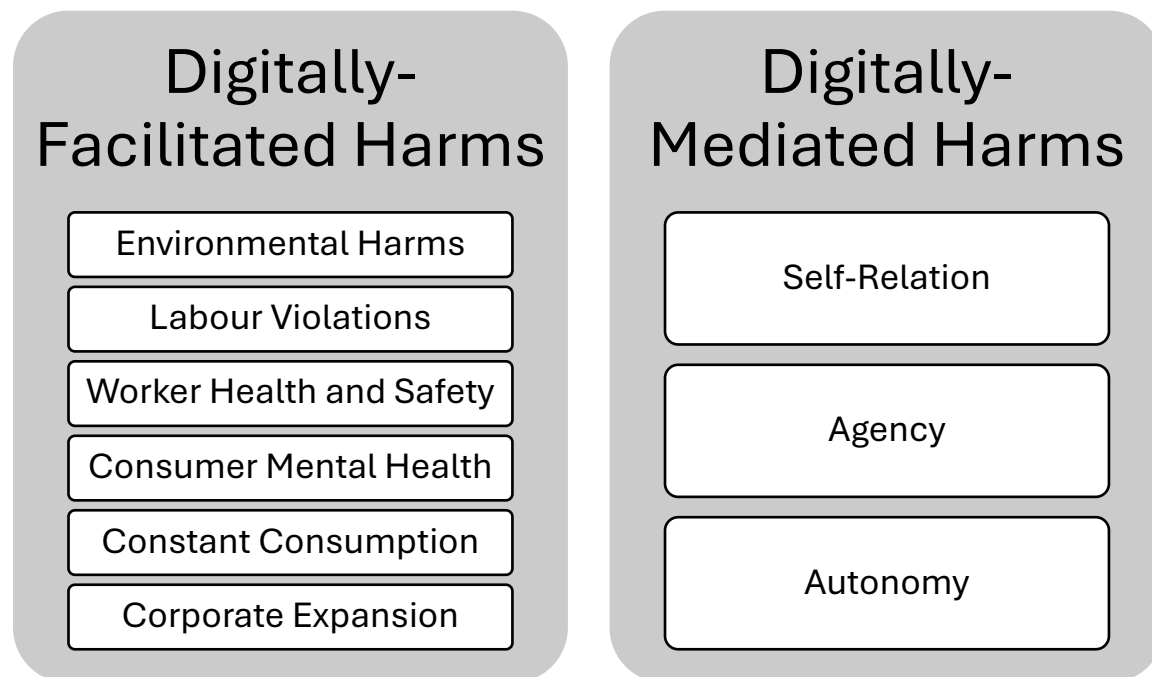


Figure 6: Summary of digitally-facilitated and digitally-mediated harms of the ultra-fast fashion industry

9.1.2 From Application to Theory Generation

The task in developing a Digital Zemiology framework is also a methodological one. In seeking to overcome the methodological issues inherent within a consolidation of SC with Zemiology, abductive analysis (Timmermans & Tavory, 2012; 2014; 2020) was utilised. In adopting a layered approach to the recognition of Digital Harm, this allows this analysis to acknowledge the underlying mechanisms producing the empirical experiences of harm. What this reveals through the case study application is the facets of the digital explored in Chapter 7 (see page 149-151) are at the core of Digital Harm production. Further to this, abductive analysis (Timmermans & Tavory, 2012; 2014; 2020) serves to generate theory from qualitative data. The entrenching of this thesis in multiple theoretical frameworks from the beginning has served to highlight the overlaps and disparities in each approach's applicability to the digital context; applying in-depth knowledge of corporate crime (Tombs & Whyte, 2015; 2020), state-corporate crime (Michalowski & Kramer, 1987; 2007), and Zemiology (Hillyard & Tombs, 2004; 2007; Pemberton, 2016) to SC located the need for a development of a digitally-informed approach to zemiological enquiry, as Zemiology possesses the transformative capacity

to speak to the loss of individual freedoms emphasised by Zuboff (2019a). Throughout the research the data collected for the case study was repeatedly revisited, allowing observations to be reexperienced in different ways (Timmermans & Tavory, 2012). Confronting the ultra-fast fashion as the unfamiliar allowed for this process to produce key insights, with this stemming from the beginning of this thesis as it was through investigating the ultra-fast fashion industry that a digitally-informed approach was required to speak to the developments in corporate practices (see pages xiii-xviii). Revisiting the original and developed theoretical frameworks devised throughout this process further allowed the overlaps and disparities to come to the fore, allowing these observations to morph into theory. This ‘recursive process of double-fitting data and theories’ (Timmermans & Tavory, 2012:179) has scrutinised the applicability of digitally-facilitated and digitally-mediated harms to the ultra-fast fashion case study, producing observations and phenomena that develop these concepts, and produces a layered theoretical approach to Digital Harm.

9.2 Digital Zemiology

Whilst digital-facilitation has provided a framework through which Social Harms can be grouped and understood through their underlying digital generative mechanisms, digital-mediation seeks to explore the implications of digitality beyond the social realm. In doing so, digitally-mediated harms possess the capability to speak to those harms that are often overlooked within zemiological theory – addressing the shortfall highlighted by Raymen in which ‘Little attention is given to those harms which perhaps lurk beneath the empirical realm of social experience’ (2023:14), especially in the digital context. In seeking to transfer these concepts into a theory of Digital Zemiology, the barriers to empirically evidencing digitally-mediated harms persist. Whilst the ultra-fast fashion case study has provided the opportunity to make inferences to these harms and observe digitally-mediated harms in a context-specific setting, limitations to this are still prevalent – as shall be addressed in the following sections. Despite this, providing a framework through which to begin acknowledging and researching those harms which

‘lurk beneath the empirical realm of social experience’ (Raymen, 2023:14), Digital Zemiology already holds a transformative capacity for wider zemiological, and criminological, study. In seeking to enable Zemiology to investigate harms beyond the empirical realm of social experience, Digital Zemiology provides an original contribution to studies of harm and further enables an interdisciplinary approach to future research.

Digital Zemiology is a layered approach to harm. As opposed to proposing an alternative framework to the Social Harms already conceptualised by Hillyard and Tombs (2004; 2007) and Pemberton (2016), this instead recognises the applicability of these harms to the social experience of the digital context and reformulates this into a unified approach to Social Harm that recognises the environmental impacts of digitality. Digitally-facilitated harm, through the case study application, serves to group these Social Harms within the digital context and recognises the power of digital technologies to reproduce and intensify their production. The implications of digital-mediation however move our attention toward a deeper level of harm production, a layer beyond the social. Chapter 4 (see pages 92-95) emphasised the need for Zemiology, considering Zuboff’s SC, to recognise those harms that are inflicted and reproduced at the cognitive level and the need for a digitally-informed approach that spoke to the metaphysical harms Zuboff suggests. Of the internal realm, we must address (i) self-relation harms, (ii) agentic harms, and (iii) autonomy harms in the digital context.

This section is therefore split into two parts. Primarily, the aim of this chapter is to solidify a framework of Digital Zemiology, before addressing the limitations of this approach and the case study from which it is formulated. In doing so, I recognise that this will not be the final iteration of a digital approach to harm but instead represents a beginning. In discussing the limitations of this approach, I emphasise the need for future Digital Zemiology research to embrace an interdisciplinary approach; one that utilises the ongoing work within the neurosciences to understand the cognitive implications of digitality (Farahany, 2023; Loh & Kanai, 2016) and embraces innovative research methods to interrogate and develop this original contribution.

As a starting point, the Digital Zemiology framework is characterised by the recognition of two layers of harm production; with digitally-facilitated harms comprising harms within the social and material realm, and digitally-mediated harms representing a deeper layer of harm inflicted at a more intimate level to the user. From this, digitally-mediated harms expand to encompass **harms to self-relation, agentic harms**, and a developed understanding of **autonomy harms** (Pemberton, 2016).

9.2.1 Social Harms as Digitally-Facilitated Harm

As has been emphasised through Chapter 8's case study, digitally-facilitated harm speaks to the many forms harm production takes in the social realm. The harms explored through the digital-facilitation lens presented an intensification and acceleration of Social Harm production, with the hyperconnectivity and rampant production in the digital context enabling harm to be produced at an unprecedented rate. Through digitally-facilitated harm, Social Harm frameworks are able to be consolidated into a unified approach with developments being made to solidify environmental harms as an area of zemiological enquiry.

Of the digitally-facilitated harms explored within the ultra-fast fashion case study, one of the most prevalent manifestations is in the form of **psychological and emotional harm** (Hillyard & Tombs, 2004; Pemberton, 2016). Highly evidencable both in the context of garment workers (see pages 168-171) and consumers (see pages 171-172 and 175-180), psychological and emotional harm serves to encompass the mental health repercussions of digitality. Beyond the ultra-fast fashion case study, the psychological and emotional harms of the digital context have become a prevalent arena of research with vast swathes of quantitative data to support this rising alarm (Haidt, 2024). Psychological and emotional harm is therefore able to be directly translated to Digital Zemiology.

A further significant manifestation of digitally-facilitated harm evidenced in the case study is that of **physical harm**. Utilising both Hillyard and Tombs' (2004) and Pemberton's (2016) approach to physical harm, this can be seen as particularly concerning for garment workers amid poor working conditions and a lack of regulation (see pages 179) leading to instances of injury and loss of life. Further to this, through Pemberton's conceptualisation of physical harm as 'in relation to physical health' (2016:28), there is recognition of the need for a 'non-hazardous physical environment to ensure a sufficient level of physical health is maintained' (2016:28) – leading to an identification of the environmental implications of the digital context. Through the case study, we can trace the physical harms inflicted to those in low- and middle-income countries in which garment manufacturing and disposal occur, and the negative impacts of this for physical health.

However, the Digital Zemiology approach to physical harm seeks to develop this approach to encompass the vast and devastating harms inflicted upon the physical world. In doing so, the 'physical' of physical harms steps away from Pemberton's physical health approach and toward an understanding of **physical as material**. Aligning this with previous discussions of the 'hardware turn' in Digital Materialism (Floridi, 2023; see page 141), the physical as material refocuses our understanding of physical harms as those that manifest in the material world – allowing Digital Zemiology to speak to the environmental consequences of digitality. This further brings Digital Zemiology in alignment with the Green Criminological focus (Lych & Long, 2022; South, 2017); as the natural environment and wildlife suffer distinct physical harms as a consequence of digitality.

9.2.2 Cognitive Harms as Digitally-Mediated Harm

Within the ultra-fast fashion industry case study, the use of the digitally-mediated harm concept allowed for the analysis of emergent harms stemming from human-digital relations. The harms that were identified as stemming from digital-mediation were found

to be produced at a level beyond the social and empirical realm, with their identification stemming from the use of abductive analysis to double-fit data with theory (Timmermans & Tavory, 2012:179). These harms concern the cognitive implications of the digital context, and were found to take three forms: (i) **self-relational**, (ii) **agentic**, and (iii) **autonomy harms**. These forms of harm shall be fully conceptualised in the following sections, before consolidating this into a framework of Digital Zemiology.

9.2.2.1 Self-Relation Harms

An original contribution offered by Digital Zemiology is that of **self-relation harms**. Building upon Pemberton's assertion that the ability to present one's own identity as we wish is a vital facet of self-actualization (2016), self-relation harms speak to the obstruction of and intervention in the formation of identity and self-knowledge. Self-relation harms, therefore, refer to the estrangement of users from their own identity formation and expression, and the asymmetry emerging between algorithmic knowledge and users own knowledge of their identities. In this way, self-relation harm has two facets: (i) **identity harms** and (ii) **epistemic harm**.

Within the ultra-fast fashion case study, overt examples of the digital's intervention in and obstruction of identity formation were pinpointed. The hyper-personalization of digital spaces and algorithmically-defined targeted advertising serves to categorise human identity into marketable traits, commodifying the cognitive processes of identity formation and expression. It is here that we return to Chapter 3's discussion of Surveillance Studies (see pages 56-59), as it is through the surveillant assemblage that human bodies are abstracted, dissected, and reassembled for surveillant analysis. As Brusseau (2020) and Hammond (2016) emphasise, these reassembled, fractured selves no longer reflect the human being that was once behind them but instead reduce the human identity to marketable demographics of attributes and interests. These flattened identity traits are reinforced through digital hyper-personalisation, with this process becoming internalised and obstructing the formation of identity without algorithmic hidden influence (Zuboff, 2019a). Within Chapter 8's case study, this was evidenced in

the centrality of data collection and analysis to the ‘digitally-empowered’ business model and its ability to determine and produce ‘real-time’ product demand (see page 181). With this process forming a key pillar of the business model and considering the profit margins garnered by Big Tech corporations from targeted advertising, we begin to see the centrality of identity harms to the accumulation of capital. **Identity harms** therefore constitute a multitude of ways in which the formation and expression of personal identity is obstructed and intervened, constituting a barrier to the self-actualization that Pemberton (2016) discusses.

Furthermore, this pervasive data collection and analysis not only produces identity harms but leads to an asymmetry of self-knowledge between data-collector and the user themselves. **Epistemic harm** as a facet of self-relational harm speaks to the increasing divide between user knowledge about themselves and the knowledge held by corporate entities through pervasive data collection and analysis. Real-world examples of this continue to gain notoriety, as users report experiences of algorithmic predictions ‘knowing’ intimate information about them before the users themselves were consciously aware of it (House, 2023). Instances of this epistemic harm are highlighted by Zuboff (2019a; 2020) as she emphasises the epistemic inequality of the digital context and the removal of knowing-status from users. Through Chapter 6’s conceptualisation of dematerialisation and Chapter 8’s application of this, we witness epistemic harm manifesting through blackboxing (Latour, 1999b) and the mystification of operations through the digital’s dematerial presence (see page 159).

9.2.2.2 Agentic Harms

This thesis has previously interrogated the implications for causative agency within human-digital relations (see pages 147-149), emphasising the non-neutrality of digital technology, and the agentic capacity imbued within the devices that signify the digital context. This stance comprises the beginning of understanding **agentic harms**, recognising (i) the digital’s ability to *overpower* human **causative agency** and (ii) the **behavioural** impacts of this. In Chapter 8’s case study, this was exhibited through ‘nudge’

marketing (Yeung, 2018b), manipulative and addictive digital architectures, and the diminishing opportunities to purchase products without ‘consenting’ to data collection and analysis. Agentic harms therefore explore the way that the digital context impacts and funnels user action, through the algorithmically-defined granting or limiting of access, as well as through enforced digitality (see pages 154-157) and the barriers to disengagement from the digital. Through agentic harms, the implications of behaviour modification (Zuboff, 2019a) can also be recognised. Translating Zuboff’s emphasis of the necessity of behaviour modification for the functioning of SC (2019a) into our understandings of agentic harms, we can begin to investigate the internalisation of this **behavioural** modification and how this manifests in user behaviour.

This conceptualisation of agentic harms further allows us to acknowledge the shifting dynamics of **causative agency** in the digital context (see pages 147-149). Avoiding the pitfall of technological determinism, solidifying an understanding of agentic harms recognises the overpowering of human agency as producing a distinct cognitive harm whilst not negating the continued existence of this agency in varying contexts and conditions. Underpinned by Chapter 7’s discussion of agentic dynamics in human-digital relations (see pages 147-149), potential avenues for resistance to the digital emerge and shall be expanded upon further in Chapter 10 (see pages 212-231).

9.2.2.3 Autonomy Harms

Underpinning this research from the beginning has been the consideration of human autonomy in the digital context. Within Chapter 3’s aligning of Critical Criminology and Zemiology with SC, it became apparent that Pemberton’s **autonomy harms** (2016:30) presented a unique opportunity to develop a framework through which the implications of Zuboff’s SC could be embedded within Zemiology. What has emerged in the discussions since are the many ways in which the functioning of digitality serves to undermine, obstruct, and intervene in human autonomous choice, with this being the driving force for the development of a Digital Zemiology framework. Developing autonomy harms for the digital context warrants understanding this at the level of

cognition as opposed to the social realm in which Pemberton situates it, developing this alongside the recognition of the diminishing opportunities for autonomous choices to be made independent of digital influence.

Autonomy harms, therefore, currently presents two key avenues of enquiry; (i) the loss of **individual freedoms** (Zuboff, 2019a) and (ii) threats to **cognitive liberty** (Farahany, 2023). The loss of individual freedoms Zuboff discusses speaks to the pervasive hidden influence of digitality in human choices (2019a), with algorithmic influence routinely undermining autonomous choice through the granting or limiting of access. Farahany's *'The Battle for Your Brain'* (2023), whilst similarly acknowledging the digital's ability to influence and manipulate autonomy, gives grounding to the threats to autonomous cognition that the digital presents. In recognising the encroachment on mental privacy that that digital poses, Farahany draws our attention to the cognitive materiality of autonomy and the need to better understand this to defend against its commodification and infringement. Through this lens, we understand cognitive liberty as the right to self-determination (2023:214), with the absence of this presenting a distinct form of autonomy harm.

9.2.3 Digital Zemiology: A Framework

From this discussion, we arrive at a framework of Digital Zemiology. Figure 7 visualises this framework and the emergent avenues for future research. As has already been highlighted, this forms an introductory framework of Digital Zemiology; one that can be developed and renegotiated through further research and refinement. However, as an introductory framework, this has sought to present Digital Zemiology as open-ended with its own potential to expand and be expanded upon as our understanding of self-relation, agency, and autonomy is advanced. From the framework depicted in Figure 7, Digital Zemiology solidifies as a framework embedded in the digital context that enables future research to investigate both the social and cognitive layers of harm production. In doing so, this necessitates an interdisciplinary approach to advance understandings in the

realm of self-relation, agency, and autonomy, and further the cognitive implications of the undermining of, obstruction of, and intervention in these vital human facets.

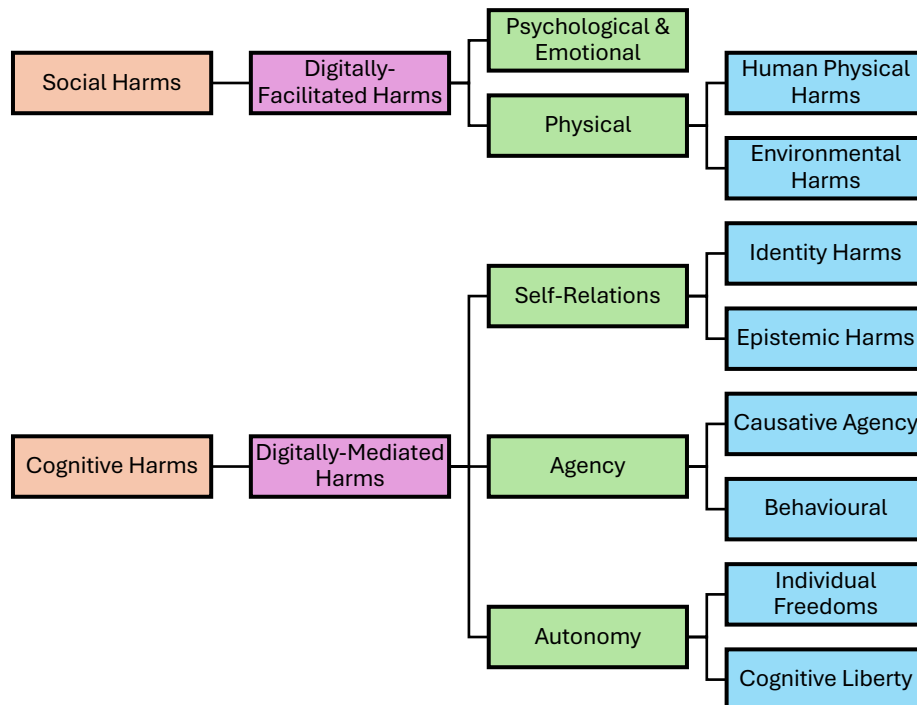


Figure 7: The Digital Zemiology framework

In formulating a framework of Digital Zemiology, this thesis has embraced insights from within Surveillance Studies, Postphenomenology, and Digital Materialism, alongside Critical Criminology and Zemiology. Seeking to consolidate SC into studies of harm has necessitated this interdisciplinary approach, embedding Digital Zemiology within knowledge of these disciplines. However, embracing this further by incorporating insights from within neuroscience signifies just one of the many avenues for interdisciplinary research this framework presents.

9.3 Limitations: Empiricism and Cognitive Harms

Whilst Digital Zemiology poses numerous original contributions to zemiological theory, the framework as it stands is not without its limitations. The need to further investigate

cognitive harms paired with the methodological barriers that have been prevalent throughout this thesis presents a complex set of conditions for future Digital Zemiological enquiry. Primarily, conceptualising and seeking to understand cognitive harms stemming from the pervasive digital unconscious presents issues for empiricism. With self-relational, agentic, and autonomy harms emerging beyond the realm of social experience, the question remains of how best to research harms resulting from the digital unconscious. As critical attention is increasingly drawn to the cognitive implications of digitality, this is a question with an underlying level of urgency. In seeking to address this issue, future research requires an interdisciplinary approach inclusive of neuroscience (Farahany, 2023), utilising innovative research methodologies, and situated outside of the Western context to allow for a deeper understanding of globalized digitality.

The singular case study method further leaves this framework open to criticism of a lack of scope and generalisability. Whilst the decision to use a case study for this research has been justified (see pages 108-110), this does not negate the valid criticisms that stem from this. The singular case study approach notoriously lacks external generalisability, with a narrow, temporal-specific context being investigated. However, amid multiple methodological issues stemming from the subject matter of this research, the issues presented during preliminary fieldwork for this research (see page xiii-xviii), and the plethora of barriers to analysis of digitally-mediated harms (see page 159), the singular case study presented a method that could overcome at least some of these concerns. However, to further understand the manifestations of digitally-mediated harms the viewpoints of users must be formative in future research.

The data collected for the case study stemmed predominantly from European, North American, and British publications and organisations, constructing a situated understanding of the generative mechanisms behind harms stemming from the ultra-fast fashion industry within a Western context. The ultra-fast fashion industry, whilst operating globally, is notably dominant within Western markets; meaning that through using this industry as the case study to develop theory, this can only be seen to currently speak to the Western context. This is a very narrow context that, whilst posing a limitation

of the framework in its current form, presents opportunities for future research that centres user voices outside of a Eurocentric lens. Furthermore, work is needed to understand how these harms manifest outside of the Western context. Whilst the case study application sought to understand the digitally-facilitated harms experience by garment workers located in low- and middle-income countries, the digitally-mediated facets of this are inaccessible via the case study method and the data that was collected for this. This has also neglected the experiences of consumers outside of the Western context. Future research should seek to understand how digitally-mediated harms manifest in the global context, with specific attention given to the implications of the 'digital divide' (Cullen, 2001; Van Dijk, 2020) and the human workforce behind digital systems (Cant, Muldoon & Graham, 2024). Doing so would broaden the scope of Digital Zemiology and allow cognitive levels of harm to be considered outside of the Western 'user' context. This would also allow for differing human-digital relations to be understood, as Chapter 6's discussion of these dynamics highlights that a user's situated knowledge influences how they engage with digital artefacts (Keymolen, 2020 see pages 145-146).

****CAVEAT – FACILITATED HARMS ARE ALSO MEDIATED****

The most notable of the above framework's limitations, however, is its current inability to speak to the digital mediation underpinning digitally-facilitated harms. Whilst through the case study findings - and in the framework presented - a hard distinction forms between facilitation and mediation,

Despite the current limitations stemming from the case study method, scope of the study, and the issues posed in investigating cognitive harms, these limitations present opportunities for future research to further Digital Zemiological understanding. As an introductory framework, Digital Zemiology invites the continuing negotiation of Digital Harm as a space of development. The accelerating rate of digitalization poses the most significant limitation to this thesis's conclusions, the rapid acceleration of technological development leads to the possibility of this already being outdated by the time the research project is finished. This necessitates that the study of Digital Harm be an area

of constant research as no theory can be seen to be applicable beyond the temporal context in which it is set. This has been evident throughout this doctoral research project; the previous four years have seen technological capabilities accelerate at a rate that is difficult to keep up with. The proliferation of generative AI within the last two years is a primary example of this, as AI models are increasingly integrated into consumer products amid rising concerns of copyright issues (Appel, Neelbauer & Schweidel, 2023), labour rights (Cant, Muldoon & Graham, 2024), and what this signifies for human development (Vallor, 2024) – a point that shall be discussed further in the Conclusion of this thesis. The relative lack of AI discussions within this research thus far is symptomatic of this rapid development; in trying to speak to digitality this research is temporally limited to the timeframe in which analytical work to place, a timeframe during which generative AI was developing and had not yet reached mass consumption. Despite this, the Digital Zemiology framework provides an original contribution and the foundations upon which digital developments can begin to be recognised within studies of harm.

Chapter 10: Resistance

Thus far, this thesis has presented a bleak analysis of digitality – one in which digital surveillance is inescapable within a networked surveillant assemblage (see pages 55-56), autonomy undermined (see pages 43-38, 208), identities commodified (see pages 56-59), privacy routinely infringed upon without awareness (see pages 43-45), and digitality is enforced (see pages 154-157). Understandably, the primary concern to arise from this discussion is that of resistance – what possible avenues for resistance are there in the shadow of such an omnipresent system of power? Short of falling into the trap of declaring the only course of action to be the rejection of all technology – not least because this would be naïve to the already addressed impossibility of such if one wishes to participate in modern society (Haggerty & Ericson, 2000 see pages 58) – wrestling with the notion of resistance is imperative to furthering our understanding of digitally-mediated harms. However, what exactly resistance means for the digital context is unclear – as is what the digital context means for resistance. From this point, numerous key avenues for discussion emerge concerning (i) how we think about resistance in the digital context, (ii) whether we can resist digitality, and (iii) who, if anyone, is able to resist. These discussion points, whilst by no means exhaustive of the work to be done in addressing the issues the digital context presents for notions of resistance, provide us with the starting points from which the many nuances of- and barriers to- digital resistance can be explored.

In the wake of increased awareness of the implications of digitality, there comes a heightened emphasis on protective legislation and advancing calls for consumer rights to be defended. However, these legislative efforts have often received criticism for increasing corporate control over digital spaces and neglecting opportunities to push for increased accountability (Nash & Felton, 2023), whilst further failing to seek protections for legal adults. As a form of resistance to digitality, legislation has proven itself to falter in many regards. As such, resistance has predominantly fallen on the shoulders of users themselves, creating a plethora of ways in which users can resist the digitality forced

upon them. This chapter therefore explores the implications of resistance through numerous lens: (i) Marxist understandings of resisting technologies, (ii) individual/user action, (iii) issues within notions of resistance, (iv) inequalities within resistance practices, (v) abolitionism, and (vi) considering an understanding of critical engagement with digital technologies.

10.1 Resisting Technologies

The notion of resisting technologies and technological advancement has a vast historical context, with close links to Marxist resistance strategies oft overlooked in traditional Marxist critique. This returns us to the Marxist underpinnings explored in Part 1 of this thesis (see pages 60-63) and the potential that Marxist critiques of technology have for digital resistance. Before engaging with the current context of resisting digital technologies, exploring this historical context provides an understanding of how this has developed as technologies have advanced and further how Marxist and Neo-Marxist understandings of technology resistance can aid this analysis.

Whilst Marx engages with machines and technology throughout his work, this is done somewhat ambiguously and has led to discrepancies within Marxist theory when considering the role of technology both as a means of exploitation and of revolution. In Chapter 15 of *Capital* (2013:256-353) titled '*Machinery and Modern Industry*', Marx charts the integration of machinery into manufacturing, the labour and exploitation implications, and the role of machinery as a catalyst for resistance. Marx recognises the presence of machinery as spurring acts of resistance: 'only since the introduction of machinery has the workman fought against the instrument of labour itself, the material embodiment of capital' (2013:294). However, Marx is critical of machine-breaking practices, conveying that to have machinery as the site of resistance is to fall short. Referring to the Luddite movement: 'It took both time and experience before the workpeople learnt...to direct their attacks, not against the material instruments of production, but against the mode in which they are used.' (2013:295).

It is from here that technology as a liberating force becomes prominent. Echoed within further Marxist accounts is the sentiment of opposing technological resistance, with instances of this being viewed negatively. Marcuse's '*Some Social Implications of Modern Technology*' (1941) exemplifies this: 'Technics by itself can promote authoritarianism as well as liberation, scarcity as well as abundance, the extension as well as the abolition of toil.' (1941:139). Here, technology is viewed as a neutral apparatus; it is not the technology itself that exploits, but the ruling class who control it. Furthermore, this quote encapsulates the pro-technology Left's ideal that those very same technologies are the means to radical change, the tools by which revolution is possible – with opposition to this being counterrevolutionary. Noble's '*Progress Without People: New technology, unemployment, and the message of resistance*' (1995) approaches this critically, summarising Marx's approach as follows:

'For Marx, technological progress was not only the means of capitalist competition, accumulation, and exploitation, but was also essential to the advance of modern industry itself ... Here too technological progress was seen as having a life of its own, with liberatory consequences for humanity. To oppose it in the present, therefore, was counterrevolutionary; all those who suffered in the present, in the wake of such progress, were encouraged to accept present technology and look for future deliverance.'

(Noble, 1995:19)

Noble makes clear the pro-technology stance prevalent within many foundational Marxist accounts; technology is to be embraced for its future potential, as opposed to recognising its exploitative implications in the present.

Within 20th century Neo-Marxist accounts, the contention between technology as liberator and technology as oppressor continues. In the wake of mass production, Adorno and Horkheimer (1997) highlight the role of technology in the production of culture as a means of mass deception and social obedience. In highlighting 'the culture

industry' (1997:120), technological mass production ensures the submission of the proletariat – through entertainment and consumption. Foregrounding technology's role in the production of culture, Adorno and Horkheimer state: 'the basis on which technology acquires power over society is the power of those whose economic hold over society is greatest' (1997:121). In recognising technology's role in the upholding of power structures, Adorno and Horkheimer, similarly to Marx, emphasise technology as a mechanism to uphold the ruling class, however, within this, technology is seen not as a neutral apparatus but a method of pacifying the proletariat. In this way, 'A technological rationale is the rationale of domination itself' (1997:121). Resistance, within this context, forms a rejection of mass-produced culture and the conformity this entails. Despite this, considering also Adorno's further works concerning cultural production (2002), how the rejection of mass production could lead to political action is left undeveloped.

Further concerning culture, in '*The Work of Art in the Age of Mechanical Reproduction*' Benjamin (2008) sought to understand the implications of technology for the arts. Recognising technology's ability to reproduce, and thus diminish an original artwork's originality and authenticity, Benjamin identified opportunities for wider cultural politicization and the potential to bring about the 'conditions which would make it possible for capitalism to abolish itself' (2008:2). Through the lens of mechanical reproduction, the technological is a means to common ownership. The reproduction capabilities of technology act as disruption, de-contextualization, and ultimately re-contextualization as the means of ownership is disseminated. In this way, the potential for resistance is found within the technological and the blurring of production and consumption – disrupting the ownership of commodities and the means of production. Whilst both seeking to understand the role of culture capitalist control, Adorno and Benjamin serve as divergent departure points in conceptualising the role of technology and means of resistance, with this being indicative of the contradictory function of technology within Neo-Marxist critique.

Within the present context of digital technologies, the role of technology as liberator has yet to be realised. Mueller's '*Breaking Things at Works*' (2021) charts resistance practices

in workplaces in various contexts of technological advancement; starting from the Luddite movement of the 19th century and the practice of machine breaking to the present context of workplace surveillance evading. Mueller argues against the quotes from Marx above; ‘The struggle against machines *were* the struggles against the society that used them’ (2021:24, emphasis in original). Mueller is specifically seeking to align Marxism with Luddism, stating early in the work that ‘to be a good Marxist is to also be a Luddite.’ (2021:5). This is underpinned by the recognition of Big Tech billionaires and their corporations as the ruling class, much in the same way as Zuboff, and the role of technology in the furthering of capital accumulation. This also brings us back to Zuboff’s earlier work, specifically ‘*In The Age of The Smart Machine*’ (1988) in which she too acknowledges the growing presence of workplace surveillance to enhance certainty and control, whilst ‘employees discover new methods of self-protection and even sabotage’ (1988:7). Mueller’s work also further aligns with that of Farahany’s ‘*The Battle for Your Brain*’ (2023), in which cases of workplace surveillance-evading form methods of resistance in defence of cognitive liberty (see pages 208).

Digital resistance, and technological resistance more broadly, seem more widely adopted within Neo-Marxist approaches with both individual and collective action now being key forms of resistance in the digital context. As digitality continues to refute technology’s capacity for liberation from capitalist exploitation, and amid SC’s inescapable presence, digital resistance tactics increase in their necessity. The remainder of this chapter will discuss the ways digital resistance manifests, and the issues and inequalities prevalent within these practices.

10.2 Resistance and the User: Obfuscation, Disruption, Disengagement

The user is often the site at, and position from, which resistance is conceptualised. Be this on an individual or collective basis, the concept of user resistance comes with a

sense of urgency. Faced with the overpowering of human agency and the lack of individual control over legislative protective efforts, this urgency is unsurprising. Whilst Digital Zemiology has made clear the diminishing opportunities to assert user agency and autonomy in the digital context, there are mechanisms by which resistance takes place – albeit it with their own shortcomings. This section shall explore user resistance through three separate concepts; (i) obfuscation (Brunton & Nissenbaum, 2016), (ii) disruption, and (iii) disengagement (Kuntsman & Miyake, 2022). Absent from this discussion are traditional, or more analogue, forms of resistance, however, this is not to deem these practices ineffective as resistance tactics. Protests, petitions, personal data requests (Fleming et al., 2023), political consumerism (Copeland, & Boulianne, 2020; Ward & de Vreese, 2011) and many more continue to have an impact in the digital context. However, as this thesis is primarily concerned with human-digital relations (see page 208) and the digital's obstructions and impediments to human agency and autonomy, the site of the digitised individual is this chapter's focus. Furthermore, it must be noted that whilst this presents a multitude of resistance tactics that can be utilised by users, the complicating factor remains the enforcement of digitality and background non-use relation of the digital (see pages 154-157). As this section shall go on to discuss, resistance is often a short-term exercise in which digitality must be returned to and is a practice which makes more evident the social inequalities that obstruct meaningful resistance.

10.2.1 Obfuscation

Digital obfuscation refers to 'the deliberate addition of ambiguous, confusing, or misleading information to interfere with surveillance and data collection' (Brunton & Nissenbaum, 2016:1). In this way, obfuscation involves direct use-relations with digital technologies and attempts to maintain privacy from digital surveillance whilst maintaining use. Obfuscation techniques vary depending on the user's desired outcome, 'ranging from buying a few minutes of time to permanently interceding with a profiling system' (Brunton & Nissenbaum, 2016:7), and include a wide range of practices. Brunton and Nissenbaum provide a succinct summary of obfuscation practices in their

‘Obfuscation: A User’s Guide for Privacy and Protest’ (2016). These range from the use of programmes such as TrackMeNot, which blends genuine with artificial search queries (Nissenbaum & Daniel, 2009; Toubiana, Subramanian & Nissenbaum, 2011), and AdNauseam, which runs in the background of a web browser and ‘clicks’ all advertisements shown to confuse data collection, to manual obfuscation tactics such as the use of online pseudonyms and ‘excessive documentation’ (2016:17) to overwhelm data collection. Kornstein (2019) further discusses the use of drag as obfuscation and countersurveillance, developing understandings of obfuscation through gender non-conformity and the role this plays for queer communities.

Obfuscation can be long- or short-term, with the question of its effectiveness being dependent upon the user’s desired outcome and the tactic’s ability to go somewhat unnoticed. At the time of the work’s publication in 2016, the free-to-download programme AdNauseam provided a valuable means by which to obfuscate data collection and render targeted advertising ineffective. However, the following year, presumably as use of it increased, the programme was banned from Google’s Web Store without prior notice (AdNauseam, 2017), rendering the programme only operational if installed in a way that bypasses Google permissions. Similarly, TrackMeNot has also been banned by Google – with Google notifying users that the software contained malware and blocking the design team’s developer account, thus making the programme inaccessible to users (TrackMeNot, n.d. via Wayback Machine, n.d.). What this serves to exemplify is the immense labour behind maintaining obfuscation techniques; the precarity of obfuscation tactics requires vigilance from the user to sustain, with the widespread use of tactics leaving them open to being overpowered.

10.2.2 Disruption

What I am terming here ‘digital disruption’ encompasses a range of micro-resistances users engage in within their use-relations with the digital. ‘Disruption’ denotes the obstructing or warranting ineffective of the necessary functioning of digital systems,

whilst maintaining a direct use-relation with the digital technologies in question. This disruption can manifest in numerous ways; the disabling of device functions such as geographic location tracking or facial recognition, the rejecting of internet cookies, ad blockers on website browsers, the covering of in-built device microphones and cameras, and the disabling of device notifications represent but a few of the ways disruption can be practiced by users. Considering this, disruption techniques denote a form of micro-resistance; typically, disruptive of the functioning of a digital device whilst not rendering this completely inoperable. Whilst obfuscation sought to confuse digital systems, disruption seeks to limit the operational functions of the digital.

A particular form of digital disruption garnered significant attention in May 2024 which saw, following the annual MET Gala Ball at the Museum of Modern Art in New York, a wave of social media users utilising the ‘block’ feature on social media platforms to control the ability of influencer and celebrity accounts to be algorithmically targeted at them. Displeased by the displays of immense wealth at the annual event, users began blocking influencers and celebrities who attended – limiting the reach of monetized online content posted by attendees and ensuring this could not still be algorithmically targeted toward the user’s digital space – as may occur if attendees were simply ‘unfollowed’. Dubbed the ‘digital guillotine’ by the user @ladyfromtheotherside on TikTok (Silva, 2024), alternatively called the ‘digitine’ or ‘operation blackout’ (Kato, 2024), the utilising of the in-built features of social media platforms to assert control over the online content that can be algorithmically targeted at a user demonstrates a form of targeted disruption. The ‘digital guillotine’ is a direct response to the online outrage sparked by social media influencer and MET Gala attendee @hayleyybaylee’s TikTok post of the event captioned ‘Let them eat cake’ (Silva, 2024) – with @hayleyybaylee citing the alleged quote of Marie Antionette (Barker, 1993), and @ladyfromtheoutside continuing the metaphor by referencing her execution by guillotine during the 18th century French Revolution. Furthermore, the ‘digital guillotine’ portrays an overt revolutionary message, with the guillotine remaining a symbol of revolution (Carrabine, 2023).

The message is reclamation and assertion of agency; as user @ladyfromtheoutside expands in their original TikTok posts: ‘We gave them their platforms. It's time to take it back, take our views away, our likes, our comments, our money, by blocking them on all social media and digital platforms.’ (via Silva, 2024). The digital guillotine represents a form of micro-resistance, as whilst user space is protected from specific, consciously-chosen actors being able to encroach into and profit from it, the user maintains engagement with the social media platform. Therefore, as a form of resistance this is of a particularly narrow scope. However, this conveys an underlying message of greater disruption – with the phrasing ‘digital guillotine’ conjuring collective, revolutionary action with the aim to reclaim the digital currencies by which social media monetization and profiteering are made possible. As an example of digital disruption, the digital guillotine exemplifies the disruptive practices employed by users in the digital sphere. Claiming the ability to grant or deny access to a user’s algorithmically-define digital space not only displays the growing critical awareness of the operational functioning of digital technologies but further demonstrates the shifting dynamics within human-digital relations.

The digital guillotine is a reactionary form of digital disruption, deviating from prior means of disruption as it is aimed at disrupting the influence of other platform users as opposed to disrupting a device’s functioning. Through the digital guillotine, we begin observing the inequalities intensified through the digital context; the blocking of influencers and celebrities on social media platforms may limit their reach and monetization abilities somewhat, however unless this practice reaches mass collective action the recipient is largely unaffected in their ability to generate vast income on social media platforms. The nuances of digital inequalities shall be expanded upon in the following section, but it is important to note the wider contexts in which disruption techniques take place and their individualising focus.

10.2.3 Disengagement

Unlike obfuscation and disruption which describe resistance techniques within an active use-relation, digital disengagement speaks to active non-use of digital devices and media (Syvertsen, 2020). As a field of research, disconnection studies explicitly cite digitalization as a transformative societal development (Lomborg & Ytre-Arne, 2021) that has intensified and embedded digital media across social life. Considering this, digital disengagement is conceptualised as a critical response to the digitality condition, taking the form of political movements (Casemajor, et al., 2015), mindful approaches to social media consumption (Baym, et al., 2020), attempts to limit use of digital devices (Ytre-Arne, et al., 2020), and digital suicide (Karppi, 2011) – to name only a few. Ranging from the non-use of particular digital platforms to the complete rejection of digital systems, practices of disengagement can either seek to maintain a use-relation to digital technologies, with disengagement targeting specific facets of this, or constitute active non-use entirely – also known as ‘going analogue’ (Kaun, 2021).

Similarly to obfuscation, digital disengagement takes different forms dependent upon user desired outcome with the dominant form through which this is explored being disengagement from social media platforms. As Karppi (2011) explores through Facebook ‘digital suicide’, this disengagement can take three forms; (i) logging out, (ii) the deactivation of the account, or (iii) the deletion of the account – with only the final option denoting a permanent disengagement from that specific social media account. Disengagement in this way can be long- or short-term, ranging in the permanence of the disengagement, and in its tactics. In the years since ‘digital suicide’, greater emphasis has been put on digital disengagement as any time spent away from one’s digital devices and attempts to reduce device use (Ytre-Arne, et al., 2020). Indicative of increasing digitalization and hyperconnectivity, disengagement has seen a turn toward mindful social media consumption (Baym, et al., 2020) as opposed to permanently leaving digital platforms.

With the research focus remaining on social media disengagement, little attention is given to the ways in which disengagement from digitality as a whole can be implemented. The turn in literature toward more short-term forms of disengagement is symptomatic of enforced digitality (see pages 154-157); as digital systems become more deeply entrenched within everyday life, long-term disengagement from this becomes more difficult and thus disengagement practices occur only short-term as digitality must always be returned to. Therefore, disengagement presents a complex understanding of resistance, the nuances of which shall be explored in the following section.

10.3 The Issue with Digital Resistance

However, issues arise when considering the primary object of study and lens through which disengagement practices are explored. Much of the existing literature maintains a focus on individual disengagement from social media use, with particular attention being given to disengagement from Facebook (Baumer et al. 2013; Gershon 2011; Karppi 2011, 2014; Light and Cassidy 2014) and Instagram (Jorge, 2019), and user experiences of non-use. The temptation remains when discussing disengagement to focus on social media for numerous reasons; not only is this often the apparatus of surveillance that users are most acquainted with, but social media platforms are often the aspect of this system that we see come under mainstream scrutiny the most due to concerns regarding data security and harmful content, undoubtedly positioning them in the minds of users as at the forefront of digital apparatuses to disengage from. However, this focus on social media disengagement falls into the trap Haggerty and Ericson (2000) warned of in that this anchors our understanding to a singular, problematic apparatus and ignores the wider system of surveillance (see page 56).

Further to this, as Kuntsman and Miyake (2022) highlight, this inseparability of digital disengagement and social media speaks to the conflation of this as *social* disengagement. Within this, the digital and the social collapse into a singular normative assumption that the social is inherently digital and vice versa. Not only are there broader

implications to be drawn from this regarding the ontological assumptions made surrounding the nature of human connection in the digital context, but this also draws our attention to the need to denaturalise sociality from digitality – a conflation that the social media-centric focus does little to alter. The social media focus further limits the scope of studies of disengagement as research efforts are concentrated on exploring individual motivations for disengagement (Andersson, 2016; Casemajor et al., 2015; Hesselberth, 2018). By maintaining an individualistic and behavioural focus, the economic, political, and technical infrastructures that make disengagement from digitality impossible continue to be ignored.

Further complications arise when considering the normative function that notions of resistance and disengagement can be seen to serve within this context – in that the very interrogation of digital disengagement serves to validate acceptance of- and engagement with- the digital as the norm, more deeply entrenching digitality as the default (Kuntsman & Miyake, 2019; 2022). This therefore gives further validity to the digital as the norm. It is from this acknowledgment of the paradoxical nature of digital disengagement that the question of whether resisting the digital is possible becomes complex. For example, the use of online platforms to promote digital resistance is similarly paradoxical – whilst the online sphere may be the ideal platform through which to spread awareness of digitally-mediated harm and encourage resistance, such efforts also serve to generate further online content to be utilised in the very algorithmic systems they are protesting and attempting to resist. Resistance, therefore, cannot take place from within the digital sphere without further engaging with and feeding the system that one wishes to encourage resistance from.

Resistance and disengagement do, however, constitute a growing consumer demand; as digitality becomes enforced, an array of apps, products, and services manifest to assist the user in their efforts to escape from the digital surveillance gaze. Digital detox retreats present the luxury service of disengagement, timed lockboxes offer an enforced disengagement, anti-distraction apps designed to make smart devices ‘dumb’ claim to foster disconnection whilst still enabling devices to operate, and self-help literature

equip the reader with their own digital detox strategies (Van Bruyssel et al., 2023; Enli & Syvertsen, 2021; Jorge et al., 2022; Syvertsen, 2022; Vanden Abeele, 2020). The paradoxical implications of utilising further digital systems to disconnect from those considered ‘distracting’ are not lost here, however there are also further concerns regarding the productization and commodification of resistance efforts (Fast, 2021), the self-regulatory undertones of self-help literature (Syvertsen & Enli, 2019), the shifting of digital frustrations away from political activism and toward individual betterment (Fish, 2017), and who it is that can engage with these acts of resistance.

What these products exemplify is the immense effort and organisation that is required to participate in disengagement practices – the labour behind these practices is a further barrier to disengagement and resistance, as it is only from a privileged position that individuals can afford to participate. Kuntsman and Miyake emphasise that much discussion of resistance and disengagement practices centres around ‘the choices of the privileged’ (2022:12) – those with the ability to opt-out, log off, and disconnect – and thus ignores the enforced digitality facing the marginalised who cannot afford the luxury of disengagement. Therefore, discussions of resistance and disengagement need to consider the corporate and political forces that shape the global digital economy and our digital existences (Gangadharan, 2021) and recognise that digitally-mediated harm furthers the classist, ableist, racist, and misogynistic harms exemplified in works of structural violence. This presents digitally-mediated harm as a continuum; a further sphere within which the harms of marginalisation are further epitomised.

However, even in the circumstances where disengagement is possible, re-engagement is necessitated by enforced digitality. Disengagement remains a time-limited practice, one in which digital systems must be returned to in order to participate in modern society. However, even in instances of complete rejection of and disengagement from digital systems, the background non-use relation of the digital unconscious (see pages 144-147) persists, and the process of data collection and commodification continues.

10.4 Digital Inequality

Critical explorations of inequality in the digital context are often done so through the lens of the ‘digital divide’ (Cullen, 2001; Van Dijk, 2020). Referring to gaps in access to technology and the internet (Van Deursen & Van Dijk, 2010), the digital divide has become a vast field of study – with research demonstrating this divide across Race (Fairlie, 2004), gender (Cooper, 2006), education level and employment status (Helsper & Reisdorf, 2017; Lythreathis, Singh, & El-Kassar, 2022), technology skill level (Van Deursen & Van Dijk, 2010), and geographical location (Fuchs & Horak, 2008), as well as being exacerbated by world events such as COVID-19 (Ramsetty & Adams, 2020; Treré et al., 2020). The phrase ‘bridging the digital divide’ has become synonymous with attempts to close gaps in digital accessibility, constituting legislative attempts to improved digital literacy skills and providing digital technologies to those without prior access (Department for Science, Innovation and Technology and Department for Digital, Media, Culture and Sport, 2023; House of Commons, 2021).

However, through this critical discussion of digital resistance, digital inequality begins to take a different form when considering enforced digitality. The focus on digital exclusion within digital divide literature pertains to a specific facet of digital inequality but fails to address the aftermath and implications of digitalization. Questions surrounding who these systems are designed for and to what end ‘bridging the digital divide’ serves go unanswered – as do the vast implications this has for disengagement. The prevalence of surveillance and data tracking through digital technologies has sinister implications for efforts to lessen digital divides, introducing pervasive state and corporate surveillance into the lives of marginalised communities and further contributing the reproduction of social inequalities (Gangadharan, 2012; 2017). The reproduction of social inequalities within the digital sphere poses further implications (Nobles, 2018; Russell, 2024); as, whilst digital inclusion seeks to ameliorate digital inequalities, inclusion itself may instead be the means through which inequalities become reinforced through the digital (Browne, 2015).

There is, however, a further facet of digital inequality to be explored – that of the aforementioned luxury of disengagement (see page 223). As Kuntsman and Miyake (2022) explore, disengagement is a choice only available to the privileged with those whose livelihoods depend on digital engagement unable to make the same choice. We again arrive at the question of human agency in the context of digitality; wherein digital inequality not only pertains to exclusion from internet access, but further must address the growing divide between those who have the ability to disengage from the digital and those who do not. Amid news stories of smartphone bans in private schools (BBC News, 2024) and celebrities who do not own smartphones (Pierce, 2024), the ability to disengage is increasingly reserved for those with the financial capacity to do so. Comparatively, those who rely on the gig economy (Vallas & Schor, 2020), for example, face diminishing agency to disengage from the digital amid work structures entrenched in surveillance and employee monitoring (Wood et al., 2018), and a reliance on digital structures to sustain a livelihood – whilst paradoxically presenting the precarious worker as an entrepreneurial with agentic choice (Kuntsman & Miyake, 2022). As Hands (2019:27) states, ‘To have the choice to set one’s devices aside...is a social and cultural luxury that implies an advantaged class position’. Disengagement, then, is a luxury afforded to some whilst being entirely unavailable to others.

The luxury of disengagement constitutes a growing digital inequality; an agentic harm exacerbating pre-existing social inequalities. As we shift from a time where technology ownership was a signifier of luxury to one where the ability to disengage is dependent upon financial and social security, disengagement increasingly becomes a practice reserved for the already privileged in society. To ‘bridge the digital divide’ therefore serves to enforce digitality among those without prior technology and internet access, whilst diminishing their agency to disengage from this. This has vast implications for understandings of the digital divide and disengagement as a whole, undoubtedly requiring extensive research to fully grasp the aftermath of digitality’s proliferation. However, for now, we arrive at an understanding of digital inequality as a site of agentic harm post-digital inclusion.

10.5 Resistance as Abolitionism

From this chapter's discussion thus far, we reach an understanding of resistance which is complex and littered with pitfalls. Legislative attempts are slow to manifest, rarely venture outside the scope of social media platforms, and remain only focused on the protection of children. User resistance tactics opted to maintain use-relations with the digital, be this individual or collective, are subject to immense organisation and labour, often relying on the chosen tactic's ability to go unnoticed and form short-term strategies as digitality must always be returned to. Similarly, where broader disengagement can be utilised subject to user privilege, the digital unconscious persists, and re-engagement is necessitated. The outlook for resistance remains bleak. However, shifting the site of resistance away from user action and back toward potential legislative efforts allows for our understanding of what constitutes resistance, and who it is that enacts resistance, to develop.

Adopting the lens of corporate abolitionism (Tombs & Whyte, 2015), resistance here takes a different stance. In advocating for the abolition of corporations, Tombs and Whyte (2015) state that to eradicate the harms stemming from corporate activities we must eradicate the corporation itself. Abolitionism here comprises a form of resistance to the continuation of the digital context; with the abolition of Big Tech corporations undermining the continuation of digital corporate surveillance. Amid routine violations of current protective legislation (Milmo & O'Carroll, 2023), privacy lawsuits (Liang, 2023), harmful content and addiction lawsuits (Crawford & Smith, 2023), and monopolisation (BBC, 2022; Clayton & Espiner, 2023; Nieva, 2023), calls for the de-escalation of corporate power are intensifying.

Forms of abolitionism are being considered by the US Justice Department and state attorneys following monopolisation lawsuits against Google's parent company Alphabet (McCabe & Grant, 2024). Proposed mechanisms to disrupt the corporation's market dominance include the sharing of collected data with rival businesses, mandating the

abandoning of deals with other Big Tech corporations to make Alphabet products the default option on devices, and the breaking up of the Google corporations – mandating that each facet of the Big Tech giant be run independently (McCabe & Grant, 2024). Corporate abolitionism appears to be gaining traction in attempts to decelerate corporate expansion and prevent further monopolisation, however issues arise in the unequal application of these measures across the Big Tech industry. As the US House of Representatives pass legislation that presents a possible ban of social media platform TikTok, concerns are raised for the further monopolisation potential this offers to US Big Tech corporations (Proulx, 2024). Further written into US law was the ultimatum that TikTok faces a ban in the US, unless its parent company ByteDance finds a US-buyer (Farrell, 2024). The motivations here become blurred; as what at first appears to be abolitionist efforts to negate corporate expansion soon become a regime of permission (Whyte, 2014) enabling the expansion of the US technology industry enabled by the state. The unequal distribution of abolition measures creates pitfalls wherein one corporation's loss is another's gain. Abolitionism possesses great strength as a political movement against digitality and corporate expansion, however, as the US legislation surrounding TikTok exemplifies, state attempts to action this cannot be relied upon.

Corporate abolitionism, as Tombs and Whyte (2015) highlight, is utopian in its vision. Eradicating the corporation seems impossible given their immense economic power, global presence, and entrenchment within daily life. However, increased regulation and accountability, the fracturing of large corporate structures, and increased taxation all create 'the effect of disrupting, disturbing and undermining the legal bases upon which the corporation is structured' (Tombs & Whyte, 2015:175), comprising interim tactics in the eventual goal of corporate abolition. However, amid consistent blackboxing (Latour, 1999b see page 150), the ability to effectively enact these measures is ever-diminishing. Without the functional understanding of how corporate products and services produce harm, the ability to enact effective abolitionist measures is weakened. It is here that corporate transparency and the levelling asymmetries of knowledge becomes key to continuing the abolitionist vision. Seeking to increase user knowledge of digital systems

and the production of Digital Harm becomes the first step in carving a path toward corporate abolitionism – albeit with the rest of the way remaining unclear.

10.6 Resistance as Critical Engagement

As the implications of digital hyperconnectivity are increasingly felt across modern society, digital resistance is ever in development and implementation. Particularly prevalent are calls for increased protection measures for under-18s; with protests movements such as Smartphone Free Childhood advocating for the banning of smartphones in schools (Smartphone Free Childhood, n.d.) and research discussing the negative impacts of digital technologies increasing in popularity (see Haidt, 2024). Whilst these efforts are aimed at the protection of under-18s from the harms of digital technologies, they exemplify a crucial facet of digital resistance yet to be explored – critical engagement and the disrupting of the digital’s normalization as a means of resistance. Whilst the forms of resistance discussed earlier in this chapter have shortcomings in their short-term implementation, their limited scope, and their exclusionary use – only being available to those already in privileged positions – critical engagement possesses the ability to be a broad and long-term approach that is empowering to those without the privilege to disengage (Natale, & Treré, 2020).

Critical engagement forms an educational movement which encourages users to engage critically with their digital technologies and increases user understandings of surveillance practices. Examples of this include the work conducted by non-profit initiatives such as The Center for Humane Technology, LOG OFF Movement, and the Algorithmic Justice League, which offer educational courses, materials, research reports, and events aimed at increasing user knowledge of digital inequalities and the impacts of digital technologies. By increasing user knowledge, critical engagement encourages the questioning of digital systems and a disruption of their normalization. These initiatives amplify the voices of users in discussions of digital inequalities and harms, advocating for collective action and legislation that protect against Digital Harm.

This does, however, fall under the self-regulatory approach that disengagement has been criticised for (see page 223). In encouraging critical engagement, whilst posing to engage in collective resistance against the normalisation of digitality, this does have an individualising element as the impetus falls to the user to begin to engage critically and to continue this practice. This is further limited by user access to educational resources and even more so requires constant labour to maintain. Critical engagement is embroiled with the emotional effects of this situated knowledge. In this way, critical engagement is not a quick-fix solution to the issues involved in digital resistance however it serves as a small message of optimism in the wake of identified barriers to resistance.

10.7 Conclusion

It remains to be explored that the digital has immense use-value for many; online platforms have long provided spaces of acceptance for marginalised communities (Miller, 2017), valuable accessibility tools (Manzoor & Vimarlund, 2018), visibility for small businesses (Jones, Borgman & Ulusoy, 2015), and the ability to sustain meaningful relationships (Chien & Hassenzahl, 2017). However, in recognising the diminishing opportunities for sustained disengagement amid the digital unconscious and enforced digitality, these use-values are seen to have an insidious shadow. This use-value is not being disputed, it is not the aim of this discussion to discredit the digital's ability to provide services and facilitate spaces that are immensely valuable to those who otherwise would not have the access or safety to occupy. However, the background relations of this cannot continue to be ignored. Techno-utopian ideals, such as those expressed by Big Tech corporations, serve to invisibilise the implications of digitality whilst further conveying a message of unwavering 'digital good'. Recognising the digital unconscious (see page 147) allows for a furthered understanding of digital inequality. In recognising the cognitive implications of digital-mediation coupled with an understanding of how digital spaces are used by marginalised communities, we can begin to understand a pattern of commodification that has the potential to disproportionately impact those already marginalised in society (Browne, 2015).

Moreover, whilst activist movements have not been discussed in detail in this chapter, digitality is seen to have repercussions for both the longevity of the movement and the value basis prescribed to their visibility. Activist movements are often forced to adapt to and adopt tactics of connectivity – utilising social media platforms, metrics of popularity and connectivity, and datafication to gain wider traction (van Dijck & Poell, 2013), despite the paradoxical implications of doing so. Whilst digitality may be portrayed as enabling activist movements to reach a wider audience through digital platforms, the long-term ability to do so is contestable and relies on constant contribution to online content to achieve. Further to this, whilst aiming for such visibility, we once again arrive at the need to recognise how utilising digital platforms to promote digital resistance contributes to the production of digitally-mediated harms. This visibility is algorithmically defined, targeted at users determined as having a pre-disposition to techno-critical viewpoints, and relies on the constant production of online content to maintain. This relies on activist movements constantly contributing to digital messaging flows, overemphasising the quantifications of social media visibility (Kaun, 2021) and distracting from the use-value of the message, with the emphasis instead being dominated by the exchange value (Dean, 2008; 2012).

Amid these barriers to resistance, both collective and individual, we need to imagine alternatives that are non-exclusionary and that seek to protect those most vulnerable to Digital Harm. What must be exemplified is the continuing need to reconceptualise resistance in the digital context, to begin to imagine alternatives through which resistance may be possible, and to disrupt the normalization of the digital as default. It is critical that this be developed whilst considering digital inequalities, with the priority being to protect those who do not have the luxury to disengage. As digitalization of social welfare systems continues to spread and reliance on gig economy work increases, it is the already vulnerable and marginalised within society who are disregarded by current resistance efforts. Research is needed that centres these voices within discussions of Digital Harm and resistance, as it is only through engaging with this experience that methods of resistance can form that are accessible to all.

Conclusion

‘No technology, no matter how advanced, will simply liberate humanity—but hopefully, the debate on future socio-technical arrangements offers a starting point for negotiating how we want to live in the future and what technologies could make a positive contribution.’

(Frey, Schaupp & Wenten, 2021:21)

Critical Criminology, Zemiology, and Surveillance Capitalism

This research has sought to answer the following primary research aim:

To understand and assess the applicability and limitations of, and emerging opportunities within, Critical Criminology in addressing Digital Harms.

Part 1 of this thesis sought to address the applicability and limitations of Critical Criminology in the digital context. **Chapter 1** situated Marxist Critical Criminology perspectives into the digital context, revealing simultaneous applicability and limitations in the extent to which the emergent harms outlined in this thesis’s introduction were able to be recognised and analysed. Pemberton’s acknowledgement of Zemiology’s sociological focus (2007) presented the possibility of developing a framework of harm with an alternative focus, not on the social but on the digital. In recognising that Zemiology possessed the greatest capacity for development, and offered many opportunities to theoretically interrogate digitality further, this research sought to expand critical enquiry through generating a theory of harm embedded within an understanding of the digital context. To do so, in **Chapter 2**, Zuboff’s theory of SC (2015; 2019a; 2019b) provided a coherent and robust conceptualisation of the digital context, its implication

of capital accumulation, and the harm emanating from this, thus providing an avenue for deeper theoretical exploration. **Chapter 3**, however, critiqued this approach and further aligned this research with an interdisciplinary approach. Strengthening Zuboff's critique of capitalism through a deeper engagement with Marxist perspectives (Fuchs, 2015; Kienscherf, 2022), SC is conceptualised as a development of capitalism in the digital context. By engaging with works within Surveillance Studies (Lyon, 2002; 2007; Murakami Wood, 2007), a deeper understanding of the centrality of surveillance to the functioning of the digital context was established and the need for a broad approach which avoids focusing on a singular problematic technology was emphasised (Haggerty & Ericson, 2000). Further emphasised was the need to address the technological determinism, behaviourism paradox, and stunted conceptualisation of resistance within Zuboff's *The Age of Surveillance Capitalism* (2019a). **Chapter 4** furthered the answering of this thesis's main aim by approaching Marxist Critical Criminology perspectives through the lens of a SC-informed understanding of digitality, reversing the analytical process of Chapter 1. From this discussion, the need for a theory of Digital Zemiology was emphasised in the wake of clear gaps in Critical Criminological knowledge.

Part 2 took this analysis further by applying the insights of Part 1 towards the development of a Digital Zemiology framework. **Chapter 5** established this thesis' methodology of theory as method, utilising abductive analysis (Timmermans & Tavory, 2012; 2014; 2022) throughout the research journey to ensure deep familiarisation with theoretical knowledge and the revisiting of data throughout. This also justified the exploratory case study method (Yin, 2014), considering both the methodological barriers prevalent in the subject matter of this thesis and those that became evident in the prior fieldwork attempt discussed in the Preface. Theory as method therefore emerged as a means to ameliorate methodological barriers whilst also aiding theory generation. **Chapter 6** investigated Critical Criminology's engagement with technology through the lenses of technology-facilitated violence (Henry & Powell, 2018; Mitchell et al., 2022), predictive policing (Sandhu & Fussey, 2021; Williams & Clarke, 2016; 2018), incarceration technologies (Kaun & Stiernstedt, 2019; McKay, 2018a; 2018b, 2020), and AIC (Hayward & Maas, 2021), before engaging with Wood's utilisation of Postphenomenology to

understand technology harms (2021; 2022; Wood et al., 2023). This research proved crucial both in Critical Criminology's understanding of the digital context and in creating a foundational understanding upon which a theory of Digital Harm began to materialise. **Chapter 7**, however, sought to distinguish the digital from the technological by further embracing insights from within Postphenomenology (Ihde, 1990; Latour, 1999b; Verbeek, 2011) and Digital Materialism (Floridi, 2023; 2024) to formulate a rationale for the need of an understanding of digital harm and thus recognising that this is distinct from Critical Criminology's prior conceptualisation of technology harms. This provides developments to Critical Criminology and Zemiology, as well as to Postphenomenology and Digital Materialism through the conceptualisation of the human-digital relation, digital-facilitation and -mediation, and enforced digitality. **Chapter 8** applied the findings thus far to the digital-context specific case study of the ultra-fast fashion industry, using this as an exemplar of the role of surveillance in capital accumulation and further of the emergence of specific forms of digitally-facilitated and -mediated harms.

Part 3 made clear the implications of this research. **Chapter 9** explores the insights from Chapter 8's case study of the ultra-fast fashion industry, before solidifying this with the wider findings of this thesis towards a Digital Zemiology framework. The key contributions of this framework to studies of harm shall be emphasised in the following section, however Chapter 9 further recognises the limitations to Digital Zemiology in its current form and the need for further research – a further point of expansion in the preceding sections. **Chapter 10** scrutinised the notion of resistance to the digital; recognising in Chapter 3 that Zuboff's own conceptualisation of resistance to SC lacked depth, this chapter engaged with Disconnection Studies (Kuntsman & Miyake, 2022) to better understand acts of digital resistance and the barriers prevalent to disengagement from the digital. Beginning with a recognition of the relationship between Marxist and Neo-Marxist analysis and acts of technological resistance, this chapter then detailed three primary means of digital resistance in the digital context: obfuscation (Brunton & Nissenbaum, 2016; see page 217-218), disruption (see pages 218-220), and disengagement (Kuntsman & Miyake, 2022; see pages 220-221). Each of these tactics possess shortcomings which exemplify the labours, luxuries, and inequalities that are

present within resistance strategies. In the wake of this, corporate abolitionism (Tombs & Whyte, 2015) presents at first promising possibility however, within this context and not that which the authors discuss, it soon proves to uphold existing geo-political interests and international power structures. Maintaining the utopian vision of corporate abolitionism towards increased accountability and transparency, however, presents a form of resistance against the ideology of SC and a rejection of the normalization of corporate power. Critical engagement presented a further promising and achievable form of resistance; acknowledging the structural inequalities prevalent within practices of resistance and the barriers to this that exist for many, engaging with digital technologies critically and seeking to level knowledge asymmetries between corporate entities and users becomes a form of resistance that not only is accessible but also achievable as a long-term strategy. Signposting the work that is already being done by numerous online safety initiatives demonstrates the value and impact of this.

The Beginning of Digital Harm

The framework offered by this thesis is an original contribution to the field of Zemiology and wider Critical Criminology, providing a perspective through which the discipline can begin to investigate, analyse, and conceptualise emergent harms within the digital context. In recognising the manifestation of **cognitive harms**, Digital Zemiology takes studies of harm beyond the social realm and answers calls for a deeper understanding harm production in the digital context (Raymen, 2023). Conceptualising this as **self-relation harms**, **agentic harms**, and **autonomy harms**, Digital Zemiology furthers the human-needs based approach to harm conceptualisation (Tifft & Sullivan, 2001). This addresses a persistent gap in knowledge within the discipline; not only introducing a digital focus to the field but further presenting a framework that can speak to present and future developments in digital technologies. Acknowledging that the obstruction of, intervention in, and undermining of these facets of self-actualization have become a practice necessary to the functioning of digitality, this research has a number of implications beyond Critical Criminology.

The typology of **digitally-facilitated** and **digitally-mediated** harms allows for a layered approach to harm production, recognising different sites and levels at which harms are produced. By introducing a layered understanding to harm production, this further allows Zemiology to recognise harms beyond the social realm and engage in analysis which questions the social priority this has previously been given. Through scrutinising the sociological focus of Zemiology previously in this thesis, the possibility of developing an alternative framework was realised. This process alone denotes an original contribution to the field and further exemplifies the possibilities of further frameworks with alternative focal points being developed. Whilst the focus here may be on the digital context, Zemiology has proven itself as not necessarily confined to a singular perspective – with this posing further opportunities for interdisciplinary work.

The framework recognises the continuing relevance of social harm in the digital context, conceptualising social harms as digitally-facilitated harms thus representing prevalence psychological and emotional harms that have been explored throughout this research, and developing physical harms to speak to the physical implications for personhood and the environment. In consolidating environmental harms in this way, this further allows Zemiological enquiry to engage with existential issues of the digital context – embracing insights from within Green Criminology (South, 2017). This represents an additional avenue for future research, as the environmental repercussions of digitalization requires further critical scrutiny and conceptualisation.

This work has also sought to develop understandings of corporate crime and state/corporate crime by bringing these perspectives into the digital context. Chapters 3 and 4 sought to exemplify the value of these frameworks in understanding the global corporate landscape of the digital context, whilst ultimately discerning that developments are needed that recognise changes in corporate conduct, the increasingly complex climate of state/corporate relations, and the states utilisation of surveillance through mundane digital technologies. Whilst exploring these aspects further has fallen

beyond the scope of this thesis, contributions are made to these perspectives through the recognition of the need for development.

Developments in Postphenomenology and Digital Materialism: Human-Digital Relations

However, this is not the only development made in the answering of this thesis's research question. At each point in this thesis, new findings have emerged that solidified the need for a Digital Zemiology framework and have developed understandings of human-digital relations and Digital Materialism, with implications for the fields of Postphenomenology and Digital Materialism. Through seeking to distinguish the technological from the digital, four facets of differentiation were conceptualised that further constitute the original contribution of this thesis. From this discussion we arrive at an understanding of the digital as:

1. *Dematerial*, operating through materiality but secondarily, abstractly, and often invisibly.
2. A *twofold use-relation*, inclusive of the technological use-relation and the use-relation to digital systems.
3. A *non-use* relation, a pervasive background relation of digitality, forming a '*digital unconscious*'.
4. Having an *ontological force* and a distinct agency, that is non-neutral and geared toward data collection, whether one has entered into a use-relation with it or not.

Finding 1 offers a unique development to studies within Digital Materialism, providing a lens through which to recognise the obfuscated materiality of digital systems at the point

of the user whilst acknowledging the perceived immateriality of those very systems. This provides a differing approach to the field amid the new material turn (Floridi, 2023; 2024), which instead conceptualises a betweenness that incorporates user perception into the study of Digital Materialism.

Finding 2 furthers Postphenomenological understandings of human relations to digital technologies, recognising the dynamics of relations that this involves and moving away from a single-layered approach. Finding 3 furthers this approach by recognising the background presence of digital systems, in which non-use still maintains a relation to digital technologies through background applications, geolocation tracking, and other digital technologies that do not necessitate direct use to collect data. Finding 4 constitutes the greatest development offered to Postphenomenology, in recognising the ontological force of digital technologies. Acknowledging the design and attention-demanding capabilities of digital technologies further moves us to a point where engaging with product designers to mitigate Digital Harms becomes possible, wherein preventative and ethical design may be considered.

These insights alone constitute a deeper engagement with both Postphenomenology and Digital Materialism in future Digital Zemiology work, and the necessity of an interdisciplinary approach in the investigation of Digital Harms.

Developments in Disconnection Studies: Enforced Digitality and Digital Inequality

Through this research, developments to our understandings of digitality as an ontological context have also been developed. The non-use relation highlighted previously and prior discussions of barriers to resistance serves to construct an understanding of the digital context as *enforced*. By understanding that one need not engage in a direct use relation for data collection and a human-digital relation to be established pushes our

understandings away from simplified arguments that digital harms can be mitigated by disengaging with one's device. Additionally recognising that digitality must always be returned to if one wishes to participate in modern society furthers our understandings of resistance strategies and the need to imagine alternatives. Furthermore, recognising the inequalities embroiled within enforced digitality and tactics of resistance further warrants a reconceptualization of the 'digital divide'. Amid increasing corporate efforts to expand digitalization globally, we must reassess who this is in service of and to what end it serves. This presents developments to the field of Disconnection Studies; in recognising that diminishing opportunities for meaningful disengagement and the inevitability of returning to digitality, further research is needed that explores user experiences of both active use and non-use of digital technologies. Vital to this is to explore experiences of those recently engaging with digitality and the global structures within which this takes place. Centring Global South perspectives within this should remain a priority; as the research's limited scope maintains a Global North focus which cannot speak to experiences of the digital outside of a Western context.

Future Research Agenda

As has been discussed throughout this research, the framework of Digital Zemiology offered here constitutes only the beginning of the work needed to address Digital Harms. Whilst this framework has sought to conceptualise harms emerging from digital-mediation and -facilitation, this has been done through a narrow lens and limited scope. Numerous limitations to the framework in its current form have been dissected throughout this thesis, however the primary concern remains the researching of cognitive harms. This presents a difficult methodological issue that requires interdisciplinary research to overcome. By engaging with neurosciences to better understand the implications of digitality for human cognition, Digital Zemiology can seek to better address the ways in which these harms manifest and their generative mechanisms.

In seeking to expand the scope of this research, it is imperative that the voices of users, non-users, and industry experts be utilised in future studies. This has been consolidated into four avenues through which the human experience of digitality should be explored in future Digital Zemiology research:

1. The centring of voices from the **Global South**,
2. The voices of digital technology **users from a global perspective**,
3. The voices of **non-users and anti-digital activists**,
4. The voices of **industry professionals and whistleblowers**.

The recognition of **physical environmental harms** stemming from digital-facilitation necessitates an engagement with voices from the Global South. Research surrounding the extractivism (Brodie, 2023) constitute an important area of Digital Harm to be understood and incorporated into the Digital Zemiology framework, whilst the increasing environmental impact of AI (Patterson et al., 2021; UNEP, 2024) and e-waste implications (Abbondanza and Souza, 2019) constitute further areas of analysis. Whilst environmental harms are a part of the Social Harm branch of the framework, this cannot be disregarded as lacking the same urgency as cognitive harms. The environmental impacts of the digital context constitute a growing research field amid accelerating climate degradation and should thus be a key area for further investigation through the lens of harm.

Further to this, current research is seeking to expose the harms prevalent within the human workforce powering digital systems (Cant, Muldoon & Graham, 2024). With much of this workforce being situated in the Global South, it is necessary that Digital Zemiology engage with those who are invisibilised by the digital's dematerial presence, constituting a global perspective of Digital Harm that does not simply centre the voices of digital technology users in higher-income countries. This research's engagement with the ultra-fast fashion industry has sought to exemplify that the harms of transnational corporate

conduct are routinely inflicted upon those in middle- and low-income countries, with these harms being intensified through digital-facilitation. The experiences of the invisibilised workforce behind digital systems constitutes a perspective in need of urgent understanding.

The issues posed within Chapter 10's discussion of resistance further merits its own site of analysis. By understanding the experiences of both anti-technology activists and non-users, it becomes possible to better understand the complex dynamics involved in acts of resistance and further comprehend the role of digital inequalities in both enforced use and non-use. Digital Zemiology should seek to deepen these understandings through experiences of both resistance strategies and digital exclusion.

Lastly, engaging current and previous industry experts in discussions of Digital Harm would allow for a deeper understanding of both digital systems and the experience of digital technology use whilst possessing situated knowledge of their functions. This would further understandings of the dynamics of user agency and explore how technical knowledge impacts human-digital relations. Furthermore, by engaging with those who have previously worked in the digital technology industry, notably those who have been corporate whistleblowers, this would even further deepen our understanding of digital resistance and the possible avenues of this, constituting an approach to resistance that incorporates elements of design and whistleblower motivations to speak out.

The research agenda provided here is ambitious, constituting years of global research to encompass all the avenues through which Digital Zemiology should be developed. However, amid the seemingly unstoppable speed of digitalisation and technological advancement, engaging with these areas of analysis should be seen as a matter of urgency. As Digital Zemiology is currently the only perspective within Critical Criminology that is seemingly able to comprehend this emerging field of research, it is imperative that this be pursued if we are to be able to defend against and resist Digital Harms.

Notes on AI

Almost entirely absent from this thesis are discussions of the recent proliferation of generative AI. Whilst the applicability of this to the Digital Zemiology framework is apparent, this ultimately fell outside of the scope of this thesis due to these products only reaching their mainstream adoption toward the end of the research period. Ultimately, however, this signifies a necessary next step in the development of Digital Zemiology and a worthy site of analysis through which to refine the framework of Digital Harm. Preliminarily, generative AI programmes such as ChatGPT, Google's Gemini, and Microsoft's CoPilot (to name only a few that are currently available to consumers) signify distinct **epistemic** and **autonomy harms** through their presence and utilisation.

Generative AI programmes further exemplify the plateau of human development that was discussed in Chapter 8's case study (see pages 161-190). Utilising Shannon Vallor's recent *The AI Mirror* (2024), we understand generative AI as operating similarly to predictive analytics. The results garnered from large language models (LLMs) are based upon large data sets scraped from the Internet, its outputs therefore are based upon historical precedents of human behaviour, attitudes, and beliefs. Amid the increasing use of generative AI over human beings for creative works (Zygadlo, 2024), the implications become insidious. Creative and innovative developments cannot be made based solely upon historical precedents; it is human imagination that makes these developments possible. Thus, the utilisation of generative AI to replace human beings in creative and innovative fields only serves to plateau these developments, regurgitating outputs based on prior feats of creativity. And this is before considering the copyright and intellectual property implications of these systems.

Recent work has sought to conceptualise the outputs of LLMs as 'bullshit' (Hicks, Humphries, & Slater, 2024). Utilising the understanding of 'bullshit' developed by Frankfurt (2002; 2005) these outputs are understood not as intentional falsehoods or hallucinations but as instead having a reckless disregard for the truth. These outputs are designed to portray the façade of knowledge, without knowledge of truth or the ability to

lie. The implications, therefore, of generative AI and LLMs through the Digital Zemiology framework are vast. Akin to **epistemic harm** in their misleading portrayal of trustworthy knowledge, **agentic harm** in their integration of digital services without user consent or the option to turn it off, and **autonomy harm** in their undermining and obstruction of the human ability to think for and articulate ourselves. This is further the latest product to exemplify what Hayward calls the infantilising power of capitalism (2024), in which generative AI and LLMs infantilize the user through undermining of one's need to articulate for themselves.

As a preliminary analysis of the relevance of generative AI to Digital Zemiology, we already witness the applicability of this framework to the studying of AI but further the frameworks rigour in application to sites of analysis outside the ultra-fast fashion context. Whilst this section has not sought to be a testament to the framework's external validity, this realisation further merits a turn toward generative AI in future Digital Zemiology research.

As generative AI products and services continue to be integrated into digital technologies, online services, and inevitably products in our physical environments, Digital Zemiology presents a theoretical perspective through which to understand the complex implications of this. The preliminary links to epistemic, agentic, and autonomy harms that have been briefly highlighted here warrant a deeper analysis of how these harms manifest in the presence of generative AI.

Taking the Digital Seriously

This thesis has sought to identify, analyse, and conceptualise emergent harms within the digital context. Throughout this process, this research has engaged with research within Surveillance Studies (Haggerty & Erison, 2000; Lyon, 2002; 2007; Murakami Wood, 2007), Marxist analysis (Fuchs, 2019; Kienscherf, 2022), Critical Criminology (Tombs & Whyte, 2015; 2015), Zemiology (Hillyard & Tombs, 2004; Pemberton, 2016), Cognitive Science

(Loh & Kanai, 2016), Postphenomenology (Ihde, 1990; Verbeek, 2011), Digital Materialism (Floridi, 2023; 2024), Information Science (Weiser, 1991), and Disconnection Studies (Kuntsman & Miyake, 2022) – among many more. The theory of Digital Harm that has been developed from this combines insights garnered from these disciplines, culminating in a perspective of Digital Zemiology that speaks to, at least in part, the concerns raised across disciplines of the impacts of digital technologies. When in Chapter 4 it was declared that the development of a Digital Zemiology must be an interdisciplinary task, the breadth and depth to which this would extend was not anticipated.

The task of developing a Digital Zemiology has taken this research beyond SC and the confines of Zemiology before returning to these sites of analysis. The framework that emerges from this, whilst littered with limitations and methodological issues in its current form, signifies a turning point for Zemiological analysis and an invitation to wider Critical Criminology to begin taking the digital seriously. The harms outlined in the Digital Zemiology approach signify harm production at unprecedented closeness to the ineffability of the human experience, harms which intervene in, obstruct, and undermine those facets of humanity that remain abstract to our own understanding. To capture the essence of self-relation, agency, and autonomy is not the motivation of Digital Zemiology, but it is instead their defence to which this perspective serves. Just as Zuboff calls for a defence of critical human rights (2019a), Digital Zemiology too calls for these parts of ourselves to remain ineffable, to maintain their abstractness, and defend their unreachability. Amid the continuing lack of understanding of Digital Harms and their production, this defence seems an impossible task. Digital Zemiology and its recognition of Digital Harm production is the first line of this defence, a defence that can only grow stronger from here.

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