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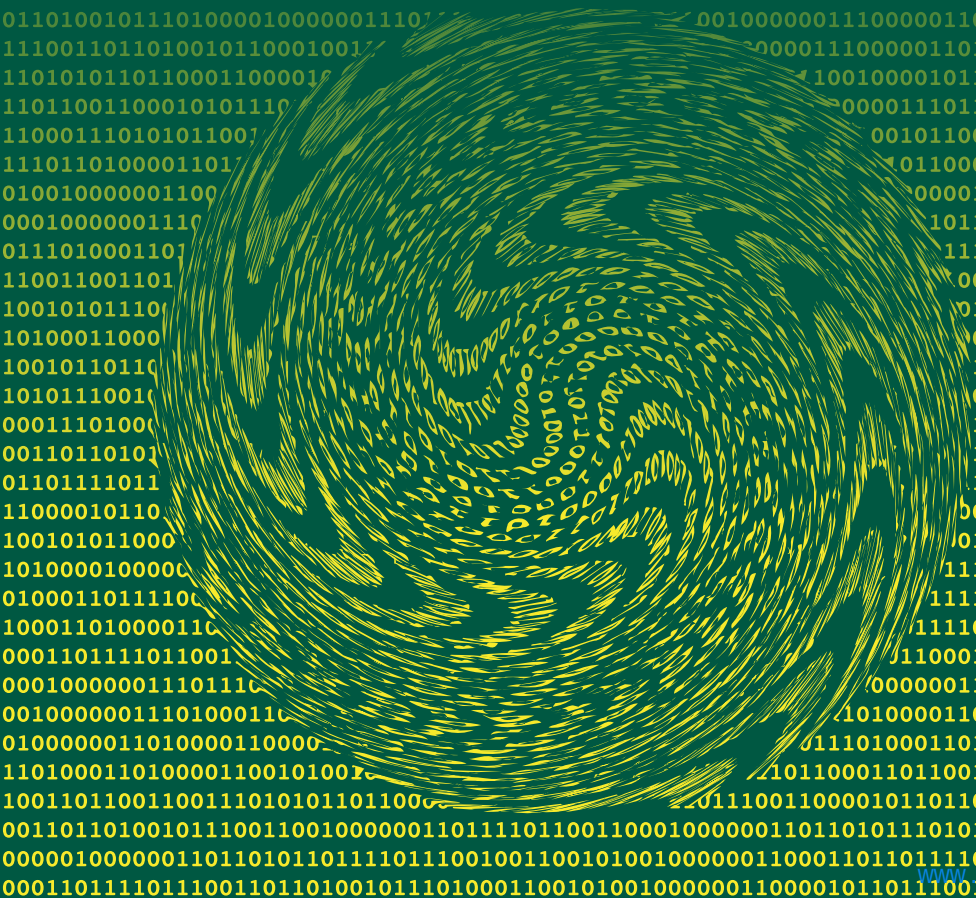
ROBERT HASSAN

THE CONDITION OF DIGITALITY

A Post-Modern Marxism for the Practice of Digital Life



The Condition of Digitality: A Post-Modern Marxism for the Practice of Digital Life

Robert Hassan

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Family, as always, is central to my functioning in any realm, and so it was here. Without Kate, Theo and Camille I'd likely be tramping the streets, muttering to myself and looking for a place to sleep.

A Note on Nomenclature

In the text I use both *postmodernity* (postmodernism) and *post-modernity* to signify two different meanings. *Postmodernism* used to convey an ideological frame as it has been used in many left and Marxist critical writings since at least the late-1970s. *Post-modernity* I see as a much stronger and more epochal signifier, indicating a phase in historical, economic and philosophical time that has moved definitively beyond *modernity*; a modernity which, following Jean-François Lyotard, was the imposed Enlightenment idea of a 'unitary history and subject'.[1] An idea and a time that has gone.

For Josie Daw and Mark Hassan

CHAPTER 1

Introduction: A World That Has Changed, But Has Not Changed

A world that has changed, but has not changed.[1]

If the title of this book vaguely recalls another, then to save you guessing I'll state at once that this is a book that is part homage and part critical reconsideration of David Harvey's *The Condition of Postmodernity*: *An Inquiry into the Origins of Cultural Change*[2], first published in 1989. The book was and still is important, for reasons I will come to. Mainly though, *Postmodernity* stands as an example of the value of Marxist criticism and analysis in what many within its various strands of thought still call late-modernity—but also as a reminder of the dangers of not upgrading, constantly, these frames of analysis, and adapting them to those new and important developments that can change the whole scene: such as the economic, cultural and *ontological* meanings and effects inherent in the processes of digital technology. My reconsideration of Harvey speaks to what is a *lacuna* in his work—the lack of a thoroughgoing analysis of digital technology in relation to that which it has so rapidly displaced: analogue technique and the human relationship with it, which together enabled, created and shaped capitalist modernity. Recall that the 'information technology revolution' as it was called, was fully underway as the eighties turned into the nineties.[3] Moreover, this lack extends beyond *Postmodernity* and goes to the left more broadly, as we will see. And so the present book seeks to begin a conversation oriented toward the need to identify a new priority in the struggles to understand and transcend a destructive and unsustainable capitalism. My proposal is that the political priority vis-a-vis the current capitalism must not be the environmental crisis, or the need to revive tactics, theories and strategies of collective resistance to capitalism's worst depredations—though these are important and must continue—but to prioritise instead a humanist understanding of the processes of a machine, a logic, that has not only rapidly colonised every part of the inhabited planet, but has also

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suffused the consciousness of almost every person within it in terms of his or her engagement with each other through networks of communication, production and consumption: I call it digitality.

But first to Harvey.

Postmodernity is an academic text but, unusually for such a work, it has been through several reprints. Even more remarkable, it crossed over into the mainstream and was reviewed in supplements, magazines and newspapers in the early 1990s. And, perhaps unprecedentedly—considering it was an overtly Marxist work—the *Financial Times* reviewer hailed it as 'probably the best [book] yet written on the link between ... economic and cultural transformations'.[4] That was then. So what? Beyond the fact that I write these words in 2019, and a minor anniversarial moment attends to its first print-run, the more serious questions a reader would ask are: why Harvey, why this particular book, and why now? Before coming to these, I should preface my answers by saying that Harvey, his book, and the present conjunction are subsets of the overarching questions that scale to the wider context that this book is about—the relevance of Marxism and internationalism today in an era of insurgent right-wing populism and ethnic nationalism; the condition of capitalism today when it seems more chronically ailing than ever, yet we increasingly feel unable to see beyond it; and, as I just noted, our understanding of digital technology, which since the time of the publication of *Postmodernity* has become a 'condition' all of its own, a process that has become so embedded and so normative (so quickly) that we have failed to see what it has done to the operation of capital and to the relevance of the basic materialist ideas of Marxism.

Why David Harvey? Well today, and notwithstanding the blips of interest in 2008 that compelled many to order a copy of *The Communist Manifesto* from Amazon to find answers to the near-collapse of the global banking system, Marxism, as a way to orient oneself in the world, and as a method through which to seek to change it, has been in the doldrums. The activist left more broadly has, since the 1970s, transmuted into an ever-growing spectrum of identitarianism. Much left theory, moreover, as Fredric Jameson wrote some time ago, had already retreated into the universities, there to be preoccupied within what he termed their 'fields of specialization'.[5] Harvey, by contrast, since the late-1980s has stood against these tendencies and continued to hew the same historical–materialist line regarding the state of the world,[6] the diagnoses of capitalism,[7] the nature of neoliberalism,[8] what he sees as the continuation of essentially Victorian-age imperialism[9]—and the necessity for a particular kind of Marxism (which I'll come to) with which to make sense of all of late-modernity's travails.[10] Moreover, Harvey has always been an activist, one who not only writes about struggles, but involves himself personally in them: be they those of car workers in Cowley in Oxford in the 1970s[11] or landless rural workers in Brazil in the 2010s, when he was in his eighties.[12] Accordingly, he has immense respect and credibility within Marxist and left-activist coalitions and across the world and has helped inform, sustain and inspire millions by

means of the dissemination of his works through distribution platforms such as YouTube and his own website, davidharvey.org. As a result, he is probably the most influential Marxist today, and has been so since at least the 1990s.

Why this particular book? Harvey is nothing if not prolific and has written most of his *oeuvre* of around 27 books since the publication of *Postmodernity*. However, *Postmodernity* is centrally important in several respects. Chance, or perhaps it was canny timing on the part of Harvey and his publisher, saw its release in 1989 coincide with a year of world-changing events in politics. The book emerged just as the political, economic and cultural tensions and contradictions that had been rumbling for some years previous, eventually broke out into the open with the symbolism of the fall of the Berlin Wall in November 1989. The ending of the Soviet Union, the beginnings of the opening up of China and India, the proclaiming of American triumphalism and the 'End of History' all followed quickly.

Postmodernity seemed to explain or rationalise the transformation of capitalism in the context of these events. It did so, because in it Harvey drew upon and developed a major idea from a previous book, *The Limits to Capital*, which was published in 1982.[13] The idea was the 'space economy of capital', a theory which stated that the shape and character and longevity of capital accumulation is influenced by geography to a profound degree, more so than anyone had previously realised. However, relative obscurity has long been the fate for most Marxist works of political economy. And such was the case here. *Limits* was well received in the journals, with one stating that, 'It will almost certainly come to be considered as one of the most significant radical works of social and political theory published during the 1980s anywhere in the world'.[14] Such hyperbolic praise is unusual in journal reviews, but it did not translate into sales. *Limits* wasn't to be reprinted until 2007 when Verso published it.

Harvey's *Postmodernity* was fortunate in that the author's restatement of the central ideas of the geo-spatial limits to capital accumulation (plus the additional exhilarating idea of 'time-space compression in the organisation of capitalism'[15]), gave theoretical expression to a material and cultural reality that was just then getting properly started—globalisation and postmodernity. These were controversial and hotly debated ideas in the early 1990s. Harvey had correctly identified that a 'sea-change' in the organisation of capitalism was in progress, and it was entering a new and intense phase with the ending of the Cold War. *Postmodernity* seemed to give rigour and analytical power to a Marxist understanding of these political, cultural and technological transformations as they were occurring. Moreover, the book's analysis of the transition from 'Fordism to flexible accumulation'[16] explained the realities of the class offensive that was then in its early phases and gave a radically different account to that of the hegemonic Hayekian ideology of market freedom that the emergent neoliberalism used to justify the economic 'restructuring' of the time.[17]

The fact that globalisation and postmodernity are hardly debated today does not indicate that they vanished as issues sometime during the years intervening

since 1989. Far from disappearing, these concepts and the realities they expressed have taken root. The ideas of a global market-place and a world of inter-connectivity have embedded themselves deep inside Western sensibilities to become mainstream and common-sense, almost the natural order of things. Nonetheless, *Postmodernity* continues to be an important book, because it represents a central articulation of a hinge-point in the history of Western modernity as it expanded globally. In the book, Harvey wrote that the 'condition' of postmodernity was primarily ideological cover for the continued expansion of Western capital across the globe, and that it had to be seen as such; as empty and illusory. Furthermore, Harvey's brilliant insight in both *The Limits* and *Postmodernity* was to recognise that there are geo-spatial limits to accumulation. The planet has only so much territory where over-accumulation in one region can be invested into another. There will come a time, he suggested, when there will be no more profitable areas of production and consumption, and capital will over-accumulate to global-crisis proportions. Capitalism will reach its end, with the mathematical certainties of physical space guaranteeing this. In his writing and activism, Harvey's whole modality is oriented toward the idea that that socialists must prepare and organise for the coming crisis. *Postmodernity* gained popular traction and remains the keywork of Harvey's writings. However, in the many books written post-*Postmodernity*, the author never reconsidered or revised (in any major way) his earlier views in the light of the tremendous changes that have occurred from then until now. And through his lectures, debates and other, web-based activities, he has taken millions with him in the belief that capitalism today is as capitalism in the 1980s, in terms of the operation of accumulation, the organisation of capitalism, and the prospects for a socialist renewal that turn upon that operation and organisation.

Why now? Ideally, 'now' should have been thirty years ago, or earlier, when globalisation and the neoliberal project were gaining what would become unstoppable momentum. But there is no going back, nor is any uninventing possible. In what was the blinking of an eyelid in historical time, a mere generation, a new category of technology has risen to domination. The term 'new category' is something to pause on and reflect about. Digital machines and their logic are (in the operation of their logic) like nothing we have ever seen before. Everything previously, going back to the dawn of our species and our drift toward technology invention and use, was some kind of analogue technology. From the wheel to the radio signal, and from writing to television, analogue technology fashioned our world and fashioned us, making possible such human-scaled processes as knowledge and communication, cities and institutions, Enlightenment and modernity, conceptions of time and space. Digitality changes all these and more, starting with the total transcending of the human scale. Time and space are now different categories of perception, condensed into immediacy and acceleration at the general level through, for example, the now-ubiquitous smartphone. Such drastic changes in scale and perception rebound back upon the analogue legacies in the realms of knowledge, reason, modernity and so

on—and we struggle with the contradictions inherent within their unavoidable interactions across economy, society, culture and politics.

Seen in this way, digital technology and digitality compel us to think hard not just about the digital, but also about that which it supplants—the analogue logic and the relationship with analogue technology that made possible our pre-digital world. We are driven also to think about *where the human stands* in relation to analogue and digital. Some scattered work was done in this regard in the 1980s and 1990s, but all of it tentative, and none of it from a Marxist perspective that, like Harvey, makes salient social change and the socialist project. The hypothesis I construct here concludes that we are, ontologically speaking, analogue beings from an analogue universe that evolved from out of our species' drift toward tool-use to become *homo sapiens*.[18] Some scattered work was done here too, but only suggestive, not systematic, and not with a view to conclusions that had ramifications for the present conjuncture in terms of political economy or techno-capitalism.[19] Meanwhile, digitality spread from a nascent but obvious technological 'revolution' around the time of Harvey's research for *Postmodernity*, to become a whole way of life—infiltrating the practice of daily life and colonising the consciousness that governs the meanings that constitute practice. It became a central element of culture, in other words; culture that is now networked and global. What this means is that the elements of *Postmodernity* that Harvey takes as empty ideologies—a globalising neoliberalism and the cultural postmodernity that expresses its superficiality—have become embedded, through digitality, into the practice that constitutes how everyday life is now increasingly lived and understood (or not understood).

Marxism Has to Become Post-Modern

Postmodernity begins, helpfully, but somewhat portentously, with a clean page before the Preface on which a heading titled 'The argument' appears, with the argument printed in the centre of the page underneath. It reads:

> There has been a sea-change in cultural as well as in political–economic practices since around 1972.
>
> This sea-change is bound up with the emergence of new dominant ways in which we experience space and time.
>
> While simultaneity in the shifting dimensions of time and space is no proof of necessary or causal connection, strong a priori grounds can be adduced for the proposition that there is some kind of necessary relation between the rise of postmodern cultural forms, the emergence of more flexible modes of capital accumulation, and a new round of 'time-space compression' in the organization of capitalism.
>
> But these changes, when set against the basic rule of capitalistic accumulation, appear more as shifts in the surface appearance rather than

> as signs of the emergence of some entirely new postcapitalist or even postindustrial society.

One could have no quarrel with the premise of the first three paragraphs. The world was changing as the 1990s got underway, and many felt precisely this kind of 'sea-change'. Many looked to Harvey and others like him[20] to see what it indicated for politics, culture and the socialist project. And Harvey's seminal idea of crisis in the space economy of capitalism as precipitant for the sea-change may have seemed convincing for many as well. And so, shaped by the 'basic rule' of accumulation, Harvey's *Postmodernity* and the great volume of work that would follow, attracted a large and still-growing interest in the idea that a classic materialist logic would anticipate, at some future point, a kind of final crisis for accumulation in a planet that had nothing left to offer the insatiable appetite for space that is vital to keep capitalism alive and accumulating.

The word 'sea-change' is important here. And Harvey uses it more than once in his argument. It denotes something profound and deep-set within a process or dynamic. Yet, how can there be sea-change within capitalist economy and society if the 'basic rule of accumulation' is unchanged? This is where Harvey's self-confessedly[21] doctrinaire Marxism comes into to view, something I will discuss at some length in Chapter One. The 'basic rule' is an item of faith in much Marxism beyond Harvey, too. For its adherents, it mandates that almost all change within capitalism must be 'surface appearance'. To argue otherwise would be to call into question the materialist foundations of Marxism, whereby, as Marx himself had imbibed from his favourite Diderot, nature—with humans included—is all just matter in motion. And without this idea, without such materialism, there can be no Marxism as we have known it. It means also that to question materialism in this strict sense would be to question modernity too as a strategic Marxist principle. Harvey thus stays faithful to the 'basic rule' and to modernity in *Postmodernity*, therefore inescapably labelling 'postmodernity' a surface manifestation; an ideology that can be understood, critiqued and resisted as such. Undeniably there has been a sea-change, and moreover it involved the cultural and political–economic manifestations regarding the experience of time and space that Harvey describes in such perceptive detail throughout his book. However, the sea-change stems from a 'mutation' in the processes of accumulation, a mutation caused by digitality and its capacity to create a new kind of accumulation because of the existence of a new form of space—a virtual and networked digitality that has rendered accumulation as a process no longer limited by physical geography. This is a logic of accumulation, by virtue of its virtuality, that is able to colonise social and cultural life much more deeply than before, exposing almost every register of existence as vulnerable to commodification. This is what makes post-modernity real, something much more than what Harvey depicts as ideological froth that circulates mainly in literature, architecture and art—and amongst the bourgeois habitués of such realms. However, to countenance the notion that a 'mutation' of

accumulation is possible, and that digitality has changed the 'basic rule', would be to make Marxism post-modern—and therefore I argue to make the Marxist perspective free to see more clearly what globalisation, neoliberalism, postmodernism and digitality are.

This does not suggest that an acceptance of post-modernity as more than just surface appearance means that we are also in some kind of postcapitalist or postindustrial era. Today the planet is more capitalist and industrial than ever before. But capitalism and industrialism are now driven and shaped by digital technology that has both physical and virtual dimensions of accumulation. This means that that 'organisation' of capitalism and industry has changed. Harvey sees it as having become much more 'flexible' than it was in the Fordist era, right up until the 1970s. This is undeniable. But precisely what aided this flexibility is not really explained in *Postmodernity*. Partly Harvey attributes the enabling to the ideology of the market and the ideology of postmodernism—to 'surface appearances' in other words. This seems to place a heavy weight of effect upon empty and illusory ideologies. Little is said about the technology that made 'flexibility' *actually* possible, and so able to change 'political-economic practices' and the perception of time and space: the digital networks that were existing and growing when he wrote. Harvey's stated argument, in effect, is to say that everything has changed but nothing (really) has changed. The essential components of Marxism, he says, do not need to be questioned. But this is to limit theory and therefore limit the potential of political action.

In the mid-1980s Ernesto Laclau and Chantal Mouffe published a book called *Hegemony and Socialist Strategy*,[22] wherein they were first to use the term 'post-Marxism' to signal the need to do away with what they saw as many of the essentialising and totalising aspects of post-war Marxism. In its own way, it was an early political post-modern work in that the authors argue amongst many other things that—using a Foucauldian and Gramscian framework—the economy (capitalism) should not be seen as the only foundation of class power, and neither should 'the productive forces, conceived as technology' be viewed as always determining.[23] Harvey does not mention what was then an important book in his *Postmodernity*. But neither does he mention Gramsci, an omission I will deal with in Chapter One, and Foucault receives some hostile attention, primarily because of his purported 'deliberate rejection of any holistic theory of capitalism'.[24] Laclau and Mouffe's work is important because it is representative of a change within recent socialist political theory. It is a political post-modernity derived from the deconstructivist turn that formed part of a generation of mainly French-inspired philosophy and social theory that sought to move away from a Marxism that had 'basic rules'—and increasingly away from Marxism altogether. This new discourse also helped to open the way for the identitarian politics and activism of the 1990s, and on until today, where Marxism and socialism have dwindled even further and lost much of the theoretical edge that was sharpened by activism. Harvey continued with his activism, but he ironically lost his theoretical edge because of a refusal to consider postmodernity or

a post-modern Marxism as anything but the empty ideological antitheses to a 'holistic theory of capitalism'.

The embrace of a post-modern Marxism is what this book makes the case for. This does not necessarily involve the rejection of the analytical value of concepts of class, of the leading role of the economy, or of the central importance of the function of capitalism in space and time. It is, rather, to prioritise things. The suddenness by which digitality came upon us needs to be recognised as something more than just a characteristic of the purported 'efficiency' and speed of computing in its many applications. Its suddenness was partly due to the weakness of social organisations to resist its implementation by business. But its suddenness meant also that we missed the importance, ontologically as well as economically and culturally, of what was really happening as a global networked society took shape.

Chapter Two sets the scene by contextualising *Postmodernity* in the year 1989. The year was turbulent and dramatic, and its shockwaves reverberate still. For some, such as Nikolai and Elena Ceausescu, dictators of Romania, it was the end of the line. For millions of ordinary people in China and India and elsewhere it was the beginnings of economic opportunity. For Harvey it was fortuitous. Globalisation and the transformed experience of time and space were what awaited much of humanity in the post-Cold War/neoliberal era. *Postmodernity* seemed to explain much of it and give hope for the future and a 'renewal of historical-geographical materialism [to] promote adherence to a new version of the Enlightenment project'.[25] Beginning in Chapter Three, and drawing from philosophical anthropology, media studies and technology studies, the book will develop the idea that humans are essentially analogue beings who have unconsciously constructed an antithetical and increasingly automated sphere wherein much of social-cultural, economic-political life now takes place. A feature of this section will be the ideology and practice of *automation*—not simply in the form of the growing ubiquity of robotics in life, but as an achieved aim of capitalist modernity. This is expressed through the instrumental goal, an historical goal now realisable through digitality, of efficiency in production by the pervasive minimisation of human labour through automation. The resulting new context of human alienation from both technology and the natural environment—with the concept of 'alienation' revived and rearticulated through the pathbreaking new work of Rahel Jaeggi[26]—will be discussed and analysed as the major effect of the condition of digitality.

Chapter Four argues that the condition of digitality is not an ideology of time and space but a reality. Three elements are salient here concerning the shaping context of digitality and some of its major determinants. First is the category-shift in the technological basis of modernity. The analogue-to-digital turn is the 'mutation' aspect I will develop, together with its reificatory effects upon the human relationship with technology, production and nature. Second is the effects of digitality upon the global social relation that is capitalism: what exactly *is* capitalism in the age of digitality, when information is a major creator of

value? It is a question that has exercised the minds of many, such as Wolfgang Streeck,[27] who imagines that capitalism (as neoliberalism) is devouring itself, but there exists no viable ideological alternative, nor adequately developed political constituency to replace it. Third, and following from the second, is the effects of digitality upon the political organising principle of liberal democracy, a social relation that emerged and developed in the context of modernity and modernity's institutions, and which has been based upon print culture and nation-states. These institutions still exist and still seek to influence and exert power, but can the time-space contexts of analogue institutions properly function and express themselves in the dominating context of digitality? If so, how might this happen? If not, then what can replace them?

In Chapter Five I turn to the economy of digitality. Here, Harvey's idea of 'time-space compression' becomes significant, but these dimensions take on dramatically new features through digitality. Here I develop the concept of 'outward' and 'inward' globalisation to articulate the process. 'Outward' globalisation is the processes of colonisation of the physical space of the planet by markets, production, the sourcing of raw materials and so on. This 'outward' aspect approached its spatial limits by the 1990s with the incorporation of the BRIC economies into global capitalism. What Harvey termed 'flexible accumulation' is rendered increasingly digital and is shown here to have become an immensely more powerful element of the capital relation than he recognised. This is expressed as the pervasive commodification that is able to penetrate and colonise (not least through the creation of a new and limitless virtual space), almost every register of life in an 'inward' globalisation process that inserts commodification into increasing spheres of existence, and simultaneously introduces a collective dependence upon digital technologies that facilitate, connect and super-charge the global economy of digitality. It is the process of 'inward' globalisation that makes possible the hitherto impossible feats of collective social communication such as Facebook, Uber, Google, Weibo, and so on. This form of digitality has become everyday practice that grows rapidly to drive digital capitalism and shape digital culture toward unknowable and uncontrollable directions. This process of 'inward' globalisation was enabled, and its path smoothed, by the ideological triumph of the 'Californian Ideology'—mid-1960s, part-hippy, part-business 'alternative thinking' that promulgated the idea that human freedom can best be attained not through the institutions of modern politics, but through networked computers.

Chapter Six, titled 'the culture of digitality', will consider the cultural manifestations of digitality stemming from its roots in the convergence of the Californian Ideology with neoliberal political economy. It does this through a reflection on the works of two theorists, Lev Manovich and Bernard Stiegler, who have sought to express the specific effects of the digital upon cultural production and consumption. I underpin my critique of these approaches with an analysis of the major theorisations of culture within the context of late-capitalism, from Adorno and Horkheimer, Guy Debord, Raymond Williams,

Zygmunt Bauman and Jean Baudrillard. Their works were (and continue to be) important, but their perspectives no longer suffice as critique of the production of culture today, because although there was significant analytical purchase when they were written, they were conceived in a pre-digital time, and with analogue-dependent theories guiding their logic.

In Chapter Seven I apply my understandings of Jaeggi's theory of alienation to a specifically digital context. This particular conjunction is new and exploratory and is aided and strengthened by the theoretical framework that builds throughout the book. It argues that alienation, a concept that Jaeggi concedes appears as 'problematic and in some respects outmoded'[28], is in fact brilliantly rescued by her from oblivion. The aim here is to connect pre-digital Critical Theory with a theory of digitality which makes salient the depth and extent of digitally-driven alienation and shows it to be the most significant issue of our age.

Notes

[1] Jean-François Lyotard (1979) *The Postmodern Condition: A Report on Knowledge*. Manchester: Manchester University Press, p.73.
[2] David Harvey (1990) *The Condition of Postmodernity*. Oxford: Blackwell.
[3] Microsoft, for example, was already a billion-dollar corporation, and was supplying the software for the industry and consumer sides of the hardware (desktop) boom.
[4] From Amazon webpage for *Postmodernity*: https://www.amazon.de/Condition-Postmodernity-Enquiry-Origins-Cultural/dp/0631162941
[5] Fredric Jameson (1979) 'Reification and Utopia in Mass Culture' *Social Text* 1, 130–148, p.139.
[6] David Harvey (2013) *The Ways of the World*. London: Profile Books.
[7] David Harvey (2010) *The Enigma of Capital and the Crises of Capitalism*. New York: Profile Books.
[8] David Harvey (2005) *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
[9] David Harvey (2003) *The New Imperialism*. Oxford: Oxford University Press.
[10] David Harvey (2014) *Seventeen Contradictions and the End of Capitalism*. New York: Profile Books.
[11] Teresa Hayter, David Harvey (eds.) (1994) *The Factory and the City: The Story of the Cowley Automobile Workers in Oxford*. Thomson Learning
[12] See interview in the Rosa Luxembourg Foundation website: https://rosaluxspba.org/en/david-harvey-we-have-to-call-off-this-capitalist-urbanization-dynamic/
[13] David Harvey (1982) *The Limits to Capital* Oxford: Blackwell.

[14] Chris Paris (1985). 'Book Reviews: *The Limits to Capital*, by David Harvey.' *The Australian and New Zealand Journal of Sociology*, 21(2), 279–283, p.279.
[15] Harvey, *Postmodernity*, p.vii.
[16] Ibid., pp.201–308.
[17] Joyce Kolko (1988) *Restructuring the World Economy*. New York: Pantheon Books.
[18] Here I draw from a number of philosophical-anthropology sources, primarily Arnold Gehlen and Jacques Ellul.
[19] A good example of such 'fields of specialisation' theorising we see in Galloway, Thacker and Wark's *Excommunication: Three Inquiries in Media and Mediation* (2013) Chicago: University of Chicago Press. All three, Wark especially, would see themselves as being influenced by Marxism's many strands. However, the book and its 'three inquiries' is no inquiry at all. It begins the Introduction by claiming that 'Today such a theophany [God-like presence] of media finds its expression in the culture industry and its awestruck reverence toward new media, digital networks, and all things computational' (pp.13–14). This much is true, but the authors then proceed in their own chapters to say virtually nothing about how these phenomena might be understood at their roots or resisted in their manifestations. We have instead three chapters that seek above all to show the erudition of their authors and their mastery of their field of specialisation. This is Jameson's 'ghettoization' of theory in the field of media, and a real-world articulation of the 'postmodernity' that Harvey dreads as an expression of political thought and seeks to call out in his books.
[20] Notable here is Bob Jessop, who for years has both developed and critiqued Harvey's 'space economy' thesis in interesting and useful ways. See for example, his 'Spatial Fixes, Temporal Fixes, and Spatio-Temporal Fixes' at https://www.lancaster.ac.uk/fass/resources/sociology-online-papers/papers/jessop-spatio-temporal-fixes.pdf
[21] See Noel Castree (2007) 'David Harvey: Marxism, Capitalism and the Geographical Imagination', *New Political Economy*, 12:1, 97–115, p.103.
[22] Ernesto Laclau and Chantal Mouffe (1985) *Hegemony and Socialist Strategy*. London: Verso.
[23] Laclau and Mouffe (1985) *Hegemony and Socialist Strategy*, p.24.
[24] Harvey, *Postmodernity*, p.46.
[25] Ibid., p.359.
[26] Rahel Jaeggi (2014) *Alienation*. New York: Columbia University Press.
[27] Wolfgang Streeck (2016) *How Will Capitalism End?* London: Verso.
[28] Jaeggi, *Alienation*, p.xix.

CHAPTER 2

1989: David Harvey's *Postmodernity*: The Space Economy of Late Capitalism

> I think we have stopped a lot of what needed stopping. And I hope we have once again reminded people that man is not free unless government is limited. There's a clear cause and effect here that is as neat and predictable as a law of physics: As government expands, liberty contracts.
>
> Ronald Reagan, Farewell Speech, 11 January 1989.

In July of 1989, in what would be the first of its three printings in a year, Blackwell published David Harvey's *The Condition of Postmodernity: An Inquiry into the Origins of Cultural Change*.[1] We can see now that it was an unusual book from an unusual academic—and that it appeared at an unusual time. When his book was published, Harvey was, or seemed to be, unexceptional. He had graduated with a PhD from the University of Cambridge in 1961 and so was an experienced academic with five books and numerous other writings already behind him. He was also a highly respected scholar within his field, writing and teaching in the rarefied air of Oxford University. Harvey was also a Marxist. And Marxists in 1980s Britain were 'the enemy within', as Prime Minister Margaret Thatcher had famously alleged, in reference to the also-allegedly Marxist-dominated National Union of Mineworkers (NUM) and other unions.[2] For the neoliberals in politics, in the academy and in the mainstream right-wing press, who had established themselves in the political saddle over the course of the 1980s, Marxists were tolerated as long as they remained obscure, confined themselves to the universities, to speaking at symposia that few went to, or writing books that not many bothered to read. But, in a general bucking of the trend of books on Marxist economics and cultural theory, *Postmodernity* sold. It was a best-seller. It became influential, and not only in the academy and left-wing circles of the Anglosphere, but way beyond, with translations published of

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several of his books.[3] According to Harvey's Wikipedia entry, the *Independent* newspaper reported that it is 'one of the fifty most important works of non-fiction to be published since 1945.'[4] Moreover, at the time of writing the book has been cited thousands of times on Google Scholar, and was downloaded in its entirety in PDF format more than thirty-thousand times from a single website.[5] To date, Harvey's YouTube lectures on the nature of capitalism, how to read Marx's *Capital*, the crises of capitalism, and so on, have attracted almost a million viewers; and a short animation titled 'The Crises of Capitalism' had well over three million viewers by mid 2019. And the *Times Literary Supplement* lauded *Postmodernity* as 'a marvellous, enjoyable and mind-opening book.'[6]

How did this happen? The continuing popularity of *Postmodernity* and the global audience for his analysis of capitalism, I would argue, are due in no small part to the fact that Harvey is also an unusual Marxist—or he was in 1989, when his book began to influence the thinking of so many. The difference is that he folds into his Marxism an original mix of political economy, social-cultural theory and geography. And it is the last of these three disciplines that matters most. It was his attention to time and space in relation to the processes of the circulation and accumulation of capital, and most especially capital within space, that seemed to capture the economic, cultural and political spirit of the late-1980s and made his analysis so different and insightful. I'll come to the basic aspects of his book shortly. But in the meantime, and by way of some necessary context, I will look at what constituted the economic, cultural and political *zeitgeist* when the book was published.

Although the term does not appear in his book, and was not anyway in general currency then, the process of *globalisation* that was fully underway in 1989 is what *Postmodernity* adroitly captures in its underlying economic and ideological dimensions. Globalisation was the pervasive sense of an ongoing *shrinking* of the planet into one capitalised and marketised space. Roland Robertson referred to this sensibility at the time as stemming from the 'compression of the world and the intensification of consciousness of the world as a whole.'[7] The cultural-aesthetic dimension of the process was significant, too, and especially so within what Harvey himself critiqued in the book as the 'deconstructionist' left: those theorists, artists and writers of the decade, and the decade before, who explicitly promulgated a postmodernity—or postmodernism—as the new spirit of the age.[8] This left tendency was encapsulated in a 1983 collection, edited by Hal Foster, titled *Postmodern Culture*. Jean Baudrillard was the book's most celebrated and self-consciously postmodern contributor, and he theorised in his essay 'The Ecstasy of Communication', and with satellite-delivered television in mind, that 'something has changed' and that the modern 'period of production and consumption gives way [now] to the … period of networks, to the narcissistic and protean era of connections…'[9]

Before discussing points of Harvey's book in some detail, I need to put my coming critique of it into an even wider context, by outlining two important *political* and *ideological* events. We need to remember that 1989 was, as I said

before, an unusual year and was so in ways that were rather more salient than the publication of a book or the opinions of some deconstructionists. There is a saying in publishing, one that applies to many other walks of life, that 'it's all about timing', and so to appreciate more fully why the book caught the moment in the way that it did, we need to consider the year 1989 itself as part of the broader canvas, a year that would come to be one of modern history's turning points.

1989

The hinge political event in 1989 was the fall of the Berlin Wall. The dramatic occurrences of the 9th of November were the culmination of building economic and political crises that had been underway for at least a decade in Eastern Europe and the Soviet Union. This process had acquired significant momentum toward a *dénouement* with the appointment of Mikhail Gorbachev to the General Secretaryship of the Communist Party of the Soviet Union in 1986.[10] The events in Berlin precipitated a rapid collapse of the Eastern European satellite states of East Germany, Poland, Hungary, Romania and Bulgaria, whose elites already understood that under Gorbachev, the Soviet Union was not going to save them from themselves. The Soviet Union itself imploded over the month of August 1991, freeing the already restive Baltic States and various Soviet republics who would all, Russia included, look to the West and Western free-market capitalism as antidote to the suffocating and authoritarian state capitalism that was forced upon the region, its nations and its peoples after 1945. For Russia in particular, as the biggest and sickest of the shattered economies, a socially devastating 'shock therapy' treatment from the IMF would await.[11] Just a few months after the Wall's collapse, a bracing dose of Western market capitalism was now held generally to be the 'solution' to the economic crises afflicting the productive forces of the Warsaw Pact countries. These would now be integrated into the global circuits of capital dominated by the US, Japan, Germany, France, Britain, and the established sub-circuits of production and investment that sprawled from these centres toward southern Europe, South America and South-East Asia. Given that the Chinese economy had already begun to open up in 1979, then the fall of the Berlin Wall led to a process where 'globalisation' would actually mean *global*. And so, in a few short years, the geographic and spatial domain of capital grew very much larger.

The ideological event of 1989 began in rather more muted fashion. It was contained in a startling essay published in the summer edition of a usually unadventurous right-wing journal, the *National Interest*. Its author was Francis Fukuyama, deputy director of the US State Department Policy Planning Staff, and analyst for the conservative and government-funded RAND Corporation. This little-known political scientist shot suddenly to talk-show and lecture-circuit celebrity status with a novel theory that chimed clearly with

the 1980s' elite atmospherics of change then underway. The fall of the Berlin Wall a few months after its publication only heightened excitement and confidence within policy and think tank circles around the world about what this paper indicated. Fukuyama claimed that humanity had reached the 'end of History'.[12] The coming end of the Cold War, he insisted, was merely a surface manifestation of much deeper and wider shifts in the ideas that motivate late-modern international politics. With absolutism gone, with fascism dead, and with Soviet communism on its knees as he wrote, humanity had arrived at a new point of world-historical importance. The 'end of History' was not the end of ideology, but the *total victory* of a particular one, of liberal democracy. As Fukuyama put it:

> …the century that began full of self-confidence in the ultimate triumph of Western liberal democracy seems at its close to be returning full circle to where it started: not to an 'end of ideology' or a convergence between capitalism and socialism, as earlier predicted, but to an unabashed victory of economic and political liberalism.[13]

For many in the West, especially those in positions of economic and political power, Fukuyama's reasoning made perfect sense. It was clear to them that the trapped and ruined peoples of the Warsaw Pact countries merely wanted what the West could happily provide: the template for political freedom to choose their rulers, but most especially the economic freedom through free markets to buy Western consumer goods. In neoliberal theory the ending of the communist project and the integration of millions of people and dozens of nation states into global capitalism meant that a captive and poor worker in, say, Bulgaria, would soon be as free and as affluent as a worker in Britain. All that was needed were the kind of market reforms and privatisations that were then sweeping the West. Not only that, the new times would be peaceful, too. It was anticipated that the decades-long threat of nuclear war would be diminished through the so-called 'peace dividend' that would accrue through the careful and enlightened diplomacy between Western and ex-Warsaw Pact negotiators. And, directing 'dividend' type thinking to the masses more directly, Thomas Friedman, the widely influential *New York Times* columnist, and a left-leaning democrat besides, later mused in his best-selling book *The Lexus and the Olive Tree*, whether (or not) it was significant that no country with a McDonald's franchise had ever gone to war with another similarly blessed.[14] In the US, Ronald Reagan, the president who had commenced his first term at the beginning of the 1980s by stating that in times of crisis, 'Government was the problem' and free markets the solution, ended his second term with the highest approval ratings and lowest disapproval ratings of any president since Harry Truman.[15] Reagan's successor George H.W. Bush immediately talked of a 'new world order'.

The world was at a crossroads in 1989. For those who believed in the positive power of markets and capital, the year heralded a new beginning. In the

East, the heavy hand of the state was being lifted from people's lives, as various politburos seemed at a loss to understand the waves of popular activism and organisation. And when not activating, millions watched TV shows and ads from West German, or Swedish, or Finnish broadcasters and dreamed of owning consumer goods that were not scarce, ancient and defective, and of enjoying food that was not primarily carbohydrates, and of a new generation of energetic and freedom-loving politicians they could vote for—if they so chose. In the West, Fukuyama would go on to write a best-selling book on the same 'end of History' subject and go on further to make the arguments in person in chat-shows that would beam to an even wider audience.[16] Meanwhile, and building on this powerful and burgeoning neoliberal political and ideological momentum, Milton Friedman, icon of the neoliberal right, put the economic side of the argument in his typically hectoring and smart alec way in an 1989 *New York Times* Op-Ed, written just a couple of weeks after the people of Berlin sledgehammered the Soviet-built Wall:

> Major premise: Socialism is a failure. Even lifelong Communists now accept this proposition. Wherever socialism has been tried, it has proved unable to deliver the goods, either in the material form of a high standard of living or in the immaterial form of human freedom.
>
> Minor premise: Capitalism is a success. Economies that have used capitalism – free private markets – as their principal means of organizing economic activity have proved capable of combining widely shared prosperity and a high measure of human freedom.[17]

These were heady times for the 'borderless world' promoters of globalisation based upon the free movement of capital, products and services.[18] However, many lifelong Marxists in the West, and many casual observers too—those who also believed that the socialisms of the USSR and China were fraudulent—were unable to accept that the ultimate victory of liberal capitalism (and the end of History) had actually come to pass. At some level of understanding, many felt that the capitalist universe was undergoing a deep crisis of which the present globalisation was simply a manifestation. The question was how to make sense of this volatile, turbulent and manifestly unequal process in the face of a powerful ideological discourse that claimed neoliberal globalisation to be the cure for the stagflation, unemployment and profitability traumas of the 1970s.[19]

The failure of post-war socialism was also a failure of orthodox Marxist theory in the West in that it could not adequately account for the planet-wide capitalism that a seemingly relentless globalisation was delivering. Harvey complained in *Postmodernity* that the 'significance of time-space compression', a concept that was crucial to understanding globalisation, was lost on most Marxists, and it was futurist and celebrity thinkers such as Alvin Toffler and Marshall McLuhan who had to do this theoretical spadework for them.[20] Not

only that, according to Harvey, the 1960s New Left in the US, Britain and elsewhere had lost its way as a practical political movement, and had become both subject and object of the ideology of postmodernity itself. Near the end of *Postmodernity* Harvey writes a section on the 'Crisis of Historical Materialism' and in it he laments the kinds of things that Jean Baudrillard had written of in my earlier quotation from his work, and which, by the way, also reads as something of a presage of our current age of identity politics:

> The New Left was preoccupied with a struggle to liberate itself from the dual shackles of old left politics (particularly as represented by traditional communist parties and 'orthodox' Marxism) and the repressive powers of corporate capital and bureaucratised institutions (the state, the universities, the unions, etc.). It saw itself from the very outset as a cultural as well as political–economic force and helped force the turn to aesthetics that postmodernism has been about.[21]

Capitalism, its Spatial Limits and Postmodernity

So, what did those millions around the world who disliked neoliberalism, and who could see no salvation in 'actually existing socialism' or its New Left articulations, find so refreshing in *Postmodernity*? The main attraction of Harvey's book, coming when it did, and in the context just outlined, was that it looked at capitalism in a different way, through a highly original conjunction that Noel Castree has called 'capitalism and the geographical imagination'.[22] The usually neglected subtitle of Harvey's book is: *An Enquiry into the Origins of Cultural Change.* It more than hints at the traditional Marxist base-superstructure, or dialectical approach that its author adopts—but from a perspective that foregrounds space. Let us look, then, at the economic 'origins' before we consider the postmodern 'cultural change' that it implies in Harvey's work.

A theory of the interaction between capital and space was something that Harvey had already worked out in his 1982 book *The Limits to Capital,* a book that contains what he would later call his 'foundational' thinking.[23] Drawing from one of Marx's basic precepts, Harvey argues that *accumulation* is the central dynamic behind capitalism, and accumulation compels capital to expand to wherever it can be profitably deployed. This is a well understood aspect within Marxism. But thinking as a geographer, Harvey asked the question that was obvious to him: expand into what, and with what effect? His answer was, *space*—and it does so with increasingly profound consequences for the accumulation process.[24] Aligning his geographical imagination with the phenomenological imagination of Henri Lefebvre, Harvey cut through years of inattention to this sphere within Marxism by arguing that this space is not primarily abstract or mathematical, but *social*.[25] In his *The Production of Space*, Lefebvre calls this space formation 'spatial practice', and the form and function this takes stem

from the 'production and reproduction' characteristics of 'each social formation'.[26] In general terms the expansion or deployment of capital into space can be into fixed forms such as plant, machinery and workers. This can be relatively unproblematic for the accumulation process and can work for a time and until such times as plant, machinery, workers and so on need replacing. Importantly, it can work until *markets inevitably mature*. Capital therefore needs to be constantly able to find and exploit new markets, sources of raw materials, cheaper labour, etc. It must expand into an ever-widening *and connected* geographic space, to wherever opportunities may be found so that the immanent need to 'accumulate, accumulate!' as Marx put it, can be satisfied. Failure to do this, Harvey argues, leads to what he sees as the deeper problem, which is the tendency toward 'overaccumulation', the point at which accumulated capital can no longer be profitably invested, and where economic crisis must ensue.[27]

Expansion at the system level is a never-ending process and has been so since the beginning of the industrial revolution. But as Harvey emphasised, this expansion has always been a temporary solution to accumulation and profitability, a systemic reflex to stave off the crisis that will always come at some stage within a certain geographic marketised area, when accumulation produces a surplus of capital relative to opportunities to employ that capital. Harvey calls this expansion the 'spatial fix' and, again following and quoting Marx, he argues that the expansion logic itself is no solution, but that it merely '...transfers the contradictions [of accumulation] to a wider sphere and gives them greater latitude.'[28] As he sums it up in *Limits*: 'There is, in short, no "spatial fix" that can contain the contradictions of capitalism in the long run.'[29]

The dynamic of the expansion of capital into space—at least since the time when Marx and Engels outlined it in the *Communist Manifesto*—has tended to be seen as a theoretical issue or normative process, as opposed to a process that is teleological and political. Harvey thus raises a corollary to his earlier question: what happens when the physical space of the planet into which capital expands, is used up? This is the central issue in *Postmodernity*. Moreover, the building crisis of space that Harvey had identified in the 1970s and 1980s had two major consequences: economic and cultural (or base and superstructural). To understand the logic behind this Harvey directs much of his attention in chapters six and seven of *Postmodernity* to capitalism's mode of production, which is reflected in what he terms the 'regime of accumulation and its associated mode of social and political regulation'.[30] The 'regime of accumulation' in question is Fordism, a system of 'mass production for mass society', which emphasised planning, regulation, standardisation, and the development of relatively inflexible systems of factory production and information bureaucracy into which both unskilled labour as well as the more professional and specialist occupations would eventually be integrated. This began with Henry Ford's production-line factories in Dearborn, Michigan, in 1914, and was quickly taken up across the industrial world in order to produce anything from bomber aircraft to electric kettles, and from insurance policies to television schedules.

So deeply did the logic of Fordism permeate Western economies and life, especially after World War Two, that it developed into rather more than an economic regime of accumulation. Fordism colonised the consciousness of social and cultural life, too. As Harvey writes:

> Postwar Fordism has to be seen … less as a mere system of mass production and more as a *total way of life*. Mass production meant standardization of product as well as mass consumption; and meant a whole new aesthetic and a commodification of culture...[31]

Fordism was a historically-specific form of capitalist production that engendered a historically-specific form of social and cultural (as well as political) life. It reached its 'high Fordism' peak during the 'golden age' economic boom of 1945–1973, a period which constituted the longest uninterrupted boom in capitalist history.[32] The Fordised 'way of life', based upon fairly stable careers spent in fairly predictable forms of production and reproduction of labour power and management structures, created an historically unprecedented way of life, one where the boom-and-bust cycle appeared for some to be over, and capitalism's volatility and anarchy seemed to have been tamed.[33] For many, Fordised capitalism looked like the answer to modernity's problems and articulated a productive mode able to create a happy balance between what Marshal Berman termed 'modernisation as adventure, and modernisation as routine'.[34] Harvey goes further, however, by arguing that 'high Fordism' created the illusion of 'a new aesthetics and psychology [and] a new kind of rationalised, modernist and populist democracy.'[35]

For those millions in the West who lived through those long post-war decades, or who were destined to be born into it, i.e. workers, economists, students, politicians, people in unions, in political parties, in all kinds of institutions, the 'total way of life' had a feeling of permanence about it. And for as long as profits from the boom continued to flow, then the *modus vivendi* of regular jobs paying regular wages in order to lead regular lives in the growing cities and suburbs was an economic and cultural bargain that had become institutionalised in the new social contract that was capitalist late modern social democracy. That this system ultimately served capitalism in that it created the increasingly one-dimensional social system that Herbert Marcuse excoriated in the 1960s was another matter. This was abstract theorising that most people did not concern themselves with when they had rising living standards to pacify them.[36] Nonetheless, the dominance of this social system was far from total, and 'the 1960s' was also to become a byword for a decade of political confrontation and social frustration. As Harvey explains:

> In spite of all the discontents and all the manifest tensions, the centrepieces of the Fordist regime held firm at least until 1973, and in the process did indeed manage to keep a postwar boom intact that favoured

> unionized labour, and to some degree spread the 'benefits' of mass production and consumption further afield. Material living standards rose for the mass of the population in the advanced industrial countries, and a relatively stable environment for corporate profits prevailed. It was not until the sharp recession of 1973 shattered that framework that a process of rapid, and as yet not well understood, transition in the regime of accumulation began.[37]

The 'sharp recession of 1973' was in fact a profound and global one, and most especially in the Anglosphere.[38] Its effects upon profit acted as a catalyst for an economic and political offensive by Anglosphere capital against the perceived causes of the crisis, which as the growingly influential neoliberal intellectuals and politicians, such as Milton Friedman and Keith Joseph[39] asserted, was the Fordist regime of accumulation itself. In the late-1970s and on into the 1980s, *restructuring* became the term that would provide ideological cover for the attack on the Fordist 'way of life'. As economic historian Joyce Kolko put it: 'The whole concept of restructuring':

> ...really gathered force after the recession and during the recovery of 1976–80, when the world economy passed into a period of slow growth and stagflation. A new vocabulary emerged to define the illness, the prognosis and the prescription – *rigidities, imperfections, adjustment, restructure*. And such euphemisms were rapidly translated into policies aimed directly at the working classes in every region of the world.[40]

Such were the ideological buzzwords that, when put into practice, would bring about the end of a mode of production that had underpinned social democracy for a generation. The assault, largely victorious, created a neoliberal antidote to the crisis that came to be known as post-Fordism. Or, to paraphrase Harvey, neoliberalism created the *condition of post-Fordism* that was achieved through the imposition of *flexible accumulation*. This is Harvey:

> Flexible accumulation … is marked by a direct confrontation with the rigidities of Fordism. It rests on flexibility with respect to labour processes, labour markets, products and patterns of consumption. It is characterized by the emergence of entirely new sectors of production, new ways of providing financial services, new markets, and, above all, greatly intensified rates of commercial, technological, and organisational innovation.

And in the context of globalisation:

> Organized labour was undercut by the reconstruction of foci of flexible accumulation in regions lacking previous industrial traditions, and by

> the importation back into the older centres of the regressive norms and practices established in these new areas.[41]

The 'cultural change' that is postmodernity rose up from these 'origins' in what was the wholesale reconstruction of the Fordist regime of accumulation. There is no need to rehearse the definitions and propositions regarding this aspect of postmodernism here, save to say that across the broad left in the Western societies there was a new preoccupation with ideas that were already present within French poststructuralism—introducing concepts such as undecidability, fragmentation, difference, diversity and so on. For Harvey these contributed to the left's intellectual malaise—an ideological miasma that was the consequence of the successful implementation of flexible accumulation and the post-modern philosophy that would essentially vindicate the society that emerged from it. He saw a political pragmatism enveloping much of the left as well. Here, previously self-evident categories such as reality, the foundations of knowledge, the sense of self-hood, Enlightenment progress and so on, were now increasingly considered, as Christopher Norris phrased it at the time in his critique of postmodernity, as merely '… fictive, transient constructions out of this or that currently prevailing discourse.'[42] Coupled with the spreading force of neoliberal economic restructuring, the idea that the left was too addled by postmodern thinking to analyse it properly or do anything much about it practically, was a dispiriting scenario to be confronted with in 1989.

The need for something to hold onto was what Harvey's *Postmodernity* offered those who refused to accept that 1989 signalled the end of History, or that all that remained for a progressive politics was what Fukuyama had termed the 'struggle for recognition' within the new 'realm of [liberal] freedom' was something to hold on to.[43] This 'struggle for recognition' was a political struggle that could fit neatly within the emergent identity politics of the postmodern left; and it was something that constituted no threat to the logic of unconstrained capital accumulation on a global scale. And so above all, Harvey's analysis offered *hope* in the context of a Marxist teleology *which did have an end-point* and one that could be *empirically discerned*.[44] His political economy of space seemed to show that the process of capital accumulation, and the need for it to constantly expand into new space in order to begin the process again, had objective limits. The 'limit' was geographic space itself. Harvey imagined that the geographical imagination had uncovered a (or *the*) contradiction within capital in the concept of the limits of the physical space of the planet—an empirical and almost mathematical contradiction that would eventually bring capitalism to its final crisis at some point over the 'long run'. This constituted more than hope. It was something akin to scientific certainty, where the only thing that socialists, students and workers needed to do was to recognise it and prepare for it. At the very end of *Postmodernity*, Harvey entreats that socialists need to initiate 'a renewal of historical materialism and of the Enlightenment project'. He finishes by stating that:

> … we can begin to understand postmodernity as an historical-geographical condition. On that critical basis it becomes possible to launch a counter-attack of narrative against the image, of ethics against aesthetics, of a project of Becoming rather than Being, and to search for unity within difference, albeit in a context where the power of the image and of aesthetics, the problems of space-time compression, and the significance of geopolitics and otherness are clearly understood. A renewal of historical-geographical materialism can indeed promote adherence to a new vision of the Enlightenment project.[45]

This was hope-filled stuff in the context of a rampant process of neoliberal globalisation, where there was a retreat into what Stanley Fish, echoing Fredric Jameson, called the 'interpretive communities'[46] of the universities, and where the remnants of the revolutionary left still clung to essentially Leninist solutions. The ideology that is the condition of postmodernity was fully entrenched by the decade of the 1990s. But Harvey's reputation as one of the world's foremost living Marxist theorists continued to give hope that instilled the conviction that all was not lost, no matter how dark the situation seemed. That was then. Why do the prospects for renewal, over three decades into the 'long run', seem even more remote today?

The Question of Technology

That there is a gap in *Postmodernity* should have been evident in 1989. It's even more apparent today, but it is one that Harvey refuses to acknowledge, as evidenced in his 2017 book, *Marx, Capital and the Madness of Economic Reason*.[47] The issue is technology,[48] but more particularly *digital* technology and the expression of its unique logic through the networked computer. This book will deal with these questions in detail. To end this part of it, I will consider why it is that Harvey barely engages with technology at all beyond a few standard phrases from Marx.

Noel Castree is a geographer and a Marxist. He is also editor of *David Harvey: A Critical Reader*,[49] and so he is in a good position to render some useful insights into his subject's strengths and weaknesses. There are many strengths, and we have already seen some of them. However, Harvey is an oddly inflexible and incurious thinker when it comes to thinking outside of his particular brand of Marxism. Castree observes that, unusually, Harvey relies to a very great extent upon his own reading of Marx, eschewing many orthodox and major post-classical readings and interpretations, such as those of Gramsci and Althusser, preferring what he himself describes as the direct 'tutelage of Marx and with very little reference to the rest of the Marxist tradition'.[50] This is an odd thing for a theoretician to say. Nonetheless, an effect of this intentionally narrow intellectual line is that although Harvey's work is holistic and

wide-ranging, it is 'conceptually and empirically thin', as Castree puts it, and with a tendency towards writing at the level of the high-abstract as opposed to the concrete.[51] Large tracts of post-Classical and neo-Marxist thinking on the evolution of the capital socio-technical relation are thus only touched upon or go unexplored altogether. For instance, in his scattered references to technology in *Postmodernity*, and latterly in his 2017 work *Marx and Capital and the Madness of Economic Reason*, Harvey pays due respect to Marx's insight on the matter, namely that:

> technology discloses man's mode of dealing with Nature and the process of production by which he sustains his life, and thereby also lays bare the mode of formation of his social relations, and of the mental conceptions that flow from them.[52]

But Harvey sees this 'one-liner', as he calls it, as not implying a 'technological determinism' in Marx, and in any case, he continues, to see technology as prime-mover of capitalism 'misses the point'—the real point being that capitalism co-opts the freedom potential of technology for its own ends. In other words, it's about who *controls* technology, capitalists or a wider democratic and socialist society, and not about the determining effects of technology per se.[53] I will say more later about the idea of technological determinism in relation to Marx's above quote in particular, because a particular theorisation of the concept permits us to see the determining power of digital technology in the context of nature and the human-technology relation that is at the centre of my argument on digitality. However, Harvey's almost scriptural allegiance to Marx's *Capital* for his theorising about the capitalist world means that he steers clear of such thinkers as Georg Lukács, and his idea of *reification* as a specific (and more problematic and generalised) form of alienation stemming from the human relationship with technology in the context of capitalism. For Lukács, reification is much more pervasive and negative and constituted the 'crucial problem of the age in which we live', affecting not only the working classes at the point of production, but every level of society.[54] Lukács was highly pessimistic concerning what technology 'discloses', and his theorisation would influence, for example, Theodor Adorno and Herbert Marcuse, who viewed capitalist technology as a profound and one-dimensional social process within which all humans are destined to exist as alienated moderns. This was a perspective that Harvey's classical and optimistic Marxism would be unwilling to accommodate. He goes so far as to equate 'reification' with 'postmodernism', as an epiphenomenal process as opposed to a core productive effect of capitalism itself.[55]

Similarly, if Harvey were less dismissive of the 'silliness'[56] of Jean-François Lyotard's writing as symptomatic of the postmodern genre, then he might have had cause to reflect upon the latter's theorisation on the logic of social and cultural change in respect of computerisation and communication technologies.

Social and cultural fragmentation is the issue here. In his 1979 work *The Postmodern Condition: A Report on Knowledge*, Lyotard gives a prescient account of the fragmentation of 'knowledge in computerized societies', and thus an account of the diminishing prospects for a socialist culture and future along the lines Harvey's *Postmodernity* envisages. For Lyotard, computerisation is making serious inroads into the creation and production of knowledge as a commodity, especially in schools and universities. Knowledge is now produced to be sold, he writes. It is and will be consumed so to be valorised in a new process of production, where the objective is primarily exchange. Knowledge therefore ceases to be an end in itself and loses its 'use-value'.[57] Lyotard goes on to argue that:

> Knowledge in the form of an information commodity indispensable to productive power is already, and will continue to be, a major—perhaps the major—stake in the worldwide competition for power. It is conceivable that the nation-states will one day fight for control of information, just as they battled in the past for control over territory, and afterwards for control of access to and exploitation of raw materials and cheap labor.[58]

Diagnosing this attitude, Harvey writes that 'There is more than a hint in Lyotard's work … that modernism has changed because the technical and social conditions of communication have changed'.[59] The paragraph ends here, as if there is nothing more to be said. However, that Lyotard's predictions of the commodification and fragmentation of knowledge and of the central importance of information as both commodity and technology have come to pass in our networked society, is beyond doubt. Then and now, however, Harvey continues to argue that the prime mover, and thus the source of potential freedom within capitalism, is not technology per se, but who owns and controls it. This notion had a stronger basis in the context of Victorian era industry with its analogue machines, but Lyotard speaks of a fully 'computerized society' that through networks of information transforms both modernity and culture.[60] However, for Harvey to accept this argument, or to have seen any merit in Lyotard's work at all concerning the transformatory power of the computer upon culture, politics and society, would have undermined his whole classical edifice.

Another significant gap in *Postmodernity*—and a gap also in the Marxist *oeuvre* more generally until recent times—is an attention to media.[61] Again, the oversight is strange, but also expected if we factor in Harvey's purist brand of Marxism. CNN was launched in 1980, MTV a year later, and satellite communications had been connecting the mediasphere since the early 1960s. I will say more on media technology, but for now I will consider what its omission in Harvey means for his thesis. The non-engagement with the work of Antonio Gramsci, as I touched on above, is significant in its own terms, in terms of the Marxism that Harvey espouses.[62] But it's also significant with respect to the

influence Gramsci has had over media studies and how this connects to technology, culture and ideology in a postmodern context. Gramsci's path-breaking work on hegemony was, beginning in the 1970s, extended into a whole genre of media and cultural studies by Stuart Hall and the Birmingham School. Once more, the idea of cultural fragmentation is the salient one here. It is well-known that Hall, influenced by the 'culturalist' Marxist, Raymond Williams,[63] developed his Encoding/Decoding model for making sense of the mass media of television and what Hall saw as its 'monological codes', codes that had to be subverted through a critical reading of its ideological content.[64] Hall viewed culture as being shaped not only by ideology, but also by technology, and like Raymond Williams tended to view television in negative terms, in terms of its 'schizophrenia'-inducing effects. As John Corner observes, the Birmingham School, generally speaking, saw television as, intrinsically, a 'bad object' which has to be subverted as it:

> routinely encourages, if it does not actually instil, 'bad' forms of subjectivity in viewers by mechanisms frequently conceptualised in terms of the subconscious, psychodynamic 'positioning' which the viewing of dominant forms of television entails as well as in terms of content.[65]

Harvey's *locus classicus* approach means that *Postmodernity* overlooks Hall, for example, a major Marxist thinker at the time, and by so doing gives little thought to the role and function of mass media as a force for the shaping and the changing of cultural forms in the mass society. And Harvey sustains this elision, notwithstanding the fact that in the 1980s globalising media were having a transformative effect upon attitudes toward the revolutionary potential of the computer. Hall's concept of media hegemony was an active and instructive theory in that decade—and it had real-world applications. For example, the celebrated Apple Macintosh ad '1984' promoted the new desktop computer overtly in terms of a technology of freedom. Its dramatic Orwellian narrative made explicit links to an emergent Californian Ideology (represented here by Apple, from Silicon Valley) that depicted computing as saviour from the Fordist totalitarian state. Television was the vector for this ad, 'the most famous Superbowl ad of them all'.[66] Read through Hall, one could see that it transmitted one of the most powerful monological codes yet to a nation and to a world being ideologically primed for a new age through new technologies that most had not yet experienced first-hand. The structure and narrative of the ad was a direct and powerful example of the postmodern ideology that Harvey was to critique as empty in 1989; yet he chose to ignore it, notwithstanding the fact that he surely must have known of the ad and its impact, as he was employed as an academic at Johns Hopkins in Baltimore for much of the decade.

But as we saw in the writing of Jean Baudrillard—a year before the Apple ad in his 1983 'Ecstasy of Communication' essay—the social and cultural fragmentation that is immanent in networked computing was already being identified

and theorised. He writes that the individual has become 'schizophrenic'—both cause and consequence of postmodern culture—and one who is 'open to everything in spite of himself [and] living in the greatest confusion.' Baudrillard closes his essay by looking toward the function of the networked computer where the individual is: '…now only a pure screen, a switching centre for all the networks of influence.'[67] It was a networked view (of fragmentation) that Stuart Hall caught up with in 2011 when writing about neoliberalism as a hegemonic process that (refracted through the technology of the internet) fragments and relativises culture under the illusion of freedom:

> The mobile phone, fast broadband connection and a Facebook entry are now 'necessities of life', even in places where millions do not have them or actually know what they do. News information, views, opinions and commentaries have been, as they say, 'democratized' i.e. flattened out by the internet, in the illusion that, since internet space is unregulated, the net is 'free'; and one person's view is as good as another's in the marketplace of opinion. We know more about the trivial and banal daily round of life of other people than we do about climate change or sustainability.

They are far from alone, but we can see that Hall and Baudrillard dare to go where Harvey doesn't in their theorisation of capitalism in the changed context of technology. In this view, the capital–technology interaction shapes an essentially formable human culture. New modes of communication can create new ways of being and seeing. And the culture of 'class consciousness' that Harvey's ideas so depend upon may, in a generation, be wiped clean like a slate and, as technology develops, so the more distant does the prospect of a culture developed in the Victorian industrial age become. And so, cramped by his self-inflicted 'direct tutelage' from the written word of Marx as primary guide, Harvey is unable to grasp the full consequences of technological and cultural change.

Why does all this matter? Who writes about postmodernity or post-Fordism any longer, anyway? Well, thanks to Google's Ngram program which searches for word-frequency in millions of books, you can see precisely how many actually do—and this can tell us something about the hegemonizing course of a concept over time. If you type in the 'postmodernity' and 'post-Fordism' keywords you will see a parallel trajectory for both: emerging in the 1980s, rising to a very high spike around the mid-1990s, and then dropping like a stone thereafter. Ngram's little graphs indicate that the processes they designate, *as ideologies*, have been hugely successful. The ideologies did not disappear. Instead their logic has bedded down into culture and society to become something normative and invisible to shape our belief-systems, our 'mental conceptions of the world', as Marx put in his consideration of the effects of technology. Postmodernity has slipped from prevailing discourses but, as an ideological 'condition', it thrives. To paraphrase Terry Eagleton in his treatise on ideology: the success of an ideology is for people to not recognise it as such.[68] The 1990s were when

the revolution in information and communication technologies really began to insert itself into economic, social and cultural life. Networked computers connected these often-disparate spheres into a globalised whole, and as this connective process thickened and became more intensive and extensive, then a newly-dominant *commodity of information* could supply its own ideology as the pervasive reality of everyday digital life.

None of this would matter so much if we were operating over Harvey's 'long run' temporal frame, where the inevitable crisis of over-accumulation would reach its end-point, at some point, of planetary saturation by under-employed capital. The task for those seeking a world beyond the rule of capital would then be to organise and prepare for the final showdown, with Harvey's ideas able to articulate the analysis that would lead to, as he puts it in the final paragraph of *Postmodernity*, a 'renewal' of historical materialism, to seek 'unity within diversity' and to 'promote adherence to a new version of the Enlightenment project'.[69]

Again, why does this matter today? It matters, because digital technology represents much more than a technological revolution like the Jacquard Loom of 1802, or the Ford assembly line of 1914 did. Digital computing represents for the first time in history a revolution carried out by means of a new *category* of technology, one that has upended much that Marxist historical materialism or Harvey's space economy of late capitalism taught was the perspective through which to understand the social relations of production. Unconsciously, these theories based themselves on a relationship with a technological category, the analogue, that was assumed to evolve towards greater capacities of efficiency and productivity. It was hardly considered that the dominance of the analogue form would be challenged. And so from the time of the industrial revolution until today, we have looked at technology from many perspectives but ignored an important, if not central one: that a technology, especially the foundational technologies of modernity—from the wheel to the steam and combustion engines, and from the ship to the airplane—is an analogue of something in nature and/or in our bodily capacities. For almost the whole period of modernity, there was little point dwelling upon this aspect, because for much of that time there was nothing to compare and contrast the analogue state with. This led to an incuriosity about our relationship with analogue technologies that have equivalency with nature and the human body, so we never asked, 'what do our technologies say about us?'[70] To which the answer would be: that *we are also analogue*—analogue creatures with capacities that are/were bounded by our own physical and cognitive limitations within the context of physical time and space. The technological transition from analogue to digital will the focus of the next chapter.

Digitality has profound consequences for Harvey's political economy of space, and its logic constitutes one of the central problems for the socialist and Enlightenment project. In his time-space compression idea, Harvey suggested, via Marshall McLuhan, that planet capitalism is shrinking dramatically, and

that this 'has had a disorienting and disruptive impact upon political-economic practices, the balance of class power, as well as upon cultural and social life.'[71] This is doubtless true, and the impact reverberates negatively today for those billions who do not benefit from a neoliberal-driven revolution made possible by networked computing. However, in his analysis Harvey keeps his eye on how the shrinking of space through time negatively affects people, and positively benefits flexible accumulation, through its new productive–organisational forms. In so doing he misses the central effect of time–space compression as far as the accumulation process goes: the creation of a whole new dimension of space—a *virtual space* that is unlimited and therefore the potential repository and generator of unlimited accumulation.

* * *

It is an arresting thought to contemplate that the phase of postmodernity (underscored by post-Fordist flexible accumulation) has endured longer than the phase of post-war Fordism itself. The mode of production and consumption that had become a 'whole way of life' that could be depicted in a Norman Rockwell painting that exuded security, dependability and durability seems now as distant and illusory as the Rockwell imagery itself. Post-modernity—or digitality—shows few real signs of an economic catastrophe that would bring down the capitalism that it sits atop. Cycles of the realisation and devaluation of capital come and go. The crisis of 2008 spelled disaster mainly for the already poor and already disenfranchised—and spelled austerity for the rest. More than a decade on, and as Wall Street booms again, many who lost their livelihoods have found new ones, but almost always with degraded and often degrading terms and conditions.

Capitalism's resilience (if it can be called that) stems not only from the leading central banks' ability to add digital noughts to the balance sheets of commercial banks to keep them afloat, and hence keep liquidity in the system, but also from the virtual dimension where rising levels of corporate profit can find ready outlets. The suppleness of capital is what neoliberalism demanded through the institutionalisation of flexible accumulation. But this institutionalisation took its toll on the sources of organised resistance that still existed in the 1970s and 1980s. In his 2016 book *How Will Capitalism End?* Wolfgang Streeck noted, and not in a gleeful, anticipating way, that: 'There is a widespread sense today that capitalism is in a critical condition, more so than at any time since the Second World War'.[72] Streeck, like Harvey in 1989, calls for organisation and resistance, beginning in the universities through what he terms a new 'public sociology'.[73] This seems (at best) unlikely. Organised resistance requires a culture for it to grow in, and there is no sign of this anywhere in the Western societies, beyond their fringes. This means that a chronic system can run (chronically) for many decades more yet, with only sclerotic and scattered oppositions facing it.[74] In politics, there is no alternative to organisation, but it is

necessary first to identify the primary obstacle to democracy and freedom at this point in history. Counterintuitive, perhaps, but the first step is to see what has become invisible in plain sight—the condition of digitality. The untamed logic of digital technology must be recognised for what it is and brought under democratic control. Then, conceivably, the organisational foundations—technological, economic and social—can be laid for a more meaningful resistance to the now-frenzied rule of capital.

Notes

[1] David Harvey (1990) *The Condition of Postmodernity.* Oxford: Blackwell.
[2] Seumas Milne (1995) *The Enemy Within*. London: Pan Books.
[3] Noel Castree (2007) 'David Harvey: Marxism, Capitalism and the Geographical Imagination', *New Political Economy*, 12(1), 97–115, p.103.
[4] David Harvey Wikipedia Entry: https://en.wikipedia.org/wiki/David_Harvey#Life_and_work.
[5] Harvey (1990) *The Condition of Postmodernity*. http://www.anthrocervone.org/PeoplesandCultures/wp-content/uploads/2012/05/harvey.pdf. Noel Castree (2007) notes that Harvey's *Postmodernity* is the 'the most widely read and cited analysis of the topic authored by a Marxist', 'David Harvey: Marxism, Capitalism and the Geographical Imagination', p.101.
[6] Review quotes from Book Depository website: https://www.bookdepository.com/Condition-Postmodernity-David-Harvey/9780631162940
[7] Roland Robertson (1992) *Globalization; Social Theory and Global Culture*. London: Sage Publications, p.8.
[8] Harvey, *The Condition of Postmodernity*, p.350.
[9] Jean Baudrillard (1983) 'The Ecstasy of Communication' in *Postmodern Culture*, Hal Foster (ed.). London: Pluto Press, p.127.
[10] Jonathan Steele (1996) 'Why Gorbachev Failed' *New Left Review* I/216, March-April, pp.141–152.
[11] Naomi Klein termed the IMF's 'transition' of the Russian economy into a western one, a neoliberal-inspired 'shock doctrine'. See her (2007) *The Shock Doctrine: The Rise of Disaster Capitalism*. London: Penguin, pp.218–245.
[12] Francis Fukuyama (1989) 'The End of History?' *The National Interest*, No 16, pp.3–18.
[13] Ibid. p.3.
[14] Thomas Friedman (1999) *The Lexus and the Olive Tree*. New York: Anchor Books, pp.248–249.
[15] Gerhard Peters (1999–2017) 'Final Presidential Job Approval Ratings.' in *The American Presidency Project*, John T. Woolley and Gerhard Peters (ed.). Santa Barbara, CA: University of California. Available from the World Wide Web: http://www.presidency.ucsb.edu/data/final_approval.php.

[16] BookTV C-Span (1992). For one of the first discussions on Francis Fukuyama's *The End of History and the Last Man*, discussions that continue to this day, with most recently the '25th anniversary' of the book's publication in 2017, see the broadcast, 17th January 1992: https://www.youtube.com/watch?v=vZWJETpfbzM. Fukuyama's thesis continues to be a kind of lodestone for those seeking to make a point about the transformation in international relations such the 1990s, and Fukuyama as a political philosopher continues to be widely influential in the political mainstream of the Anglosphere.

[17] Milton Friedman (1989) 'We have Socialism-QED' *New York Times*, 31st December: http://www.nytimes.com/2008/10/19/opinion/19opclassic.html

[18] Typical of the breathless ambition of many in the business class was Ken'ichi Omahe's (1990) *The Borderless World*. New York: Harper Perennial.

[19] For an excellent contemporaneous account of how the crises of the 1970s were 'solved' see Joyce Kolko's (1988) *Restructuring the World Economy*. New York: Pantheon Books.

[20] *The Condition of Postmodernity*, pp.353–354.

[21] Ibid.

[22] Noel Castree (2007) 'David Harvey: Marxism, Capitalism and the Geographical Imagination'.

[23] David Harvey (1982) *The Limits to Capital* Oxford: Blackwell. p.337, n.4.

[24] The geographic or spatial dimension of capital accumulation had been the object of concern by Marxist thinkers before, of course. Most notable was the Annales School in France, featuring Ferdinand Braudel, Marc Bloch and others, who in turn inspired Immanuel Wallerstein and his widely influential 'world systems theory'. See his 1974 *The Modern World-System*. New York: Academic Press. These, however, were historians and tended to look back. More relevant for our purposes is the work of Scott Lash and John Urry, especially their book *The End of Organized Capital* (Cambridge: Polity Press), which came out in 1987 and was oddly missed or ignored by David Harvey. I will have more to say on this book later.

[25] Harvey, *Limits to Capital*, p.372. n.1.

[26] Henri Lefebvre (1991) *The Production of Space*. Oxford: Blackwell, p.33.

[27] Harvey, *Limits to Capital*, Chapter 7.

[28] Ibid., p.414.

[29] Ibid., p.442.

[30] Harvey, *The Condition of Postmodernity,* p.121

[31] Ibid., p.135 (emphasis added)

[32] See Andrew Glyn et al. (1990) 'The Rise and Fall of the Golden Age' in *The Golden Age of Capitalism: Reinterpreting the Postwar Experience*, Stephen A. Marglin and Juliet B. Schor (eds) Oxford: Oxford University Press, p.67 & 122.

[33] Marc Levinson (2016) *An Extraordinary Time: The End of the Postwar Boom and the Rise of the Ordinary Economy*. New York: Basic Books.

[34] Marshall Berman (1982) *All That is Solid Melts into Air: The Experience of Modernity*. New York: Verso, p.243.
[35] Harvey, *The Condition of Postmodernity,* p.126.
[36] Herbert Marcuse (1991) *One-Dimensional Man*. Boston, MA: Beacon Press.
[37] Harvey, *The Condition of Postmodernity,* p.140.
[38] Giuliano Garavini (2011) 'Completing Decolonization: The 1973 "Oil Shock" and the Struggle for Economic Rights', *The International History Review*, 33:3, 473–487.
[39] Keith Joseph was a cabinet minister in the Thatcher government who had previously founded and run the Centre for Policy Studies (CPS) in 1974 with the express goal of promoting free-market and neoliberal policies in the British economy and around the world.
[40] Joyce Kolko (1988) *Restructuring the World Economy*, p.31. (emphasis in original).
[41] Harvey. *The Condition of Postmodernity,* p.147.
[42] Christopher Norris (1992) *Uncritical Theory*. London: Lawrence and Wishart, p.95.
[43] Francis Fukuyama (1992) *The End of History and the Last Man*. New York: The Free Press, Chapter 7 & p.289.
[44] Harvey wrote another well-received book on the idea of hope in his *Spaces of Hope* (2000) (Edinburgh: Edinburgh University Press) that argues that the uneven development of neoliberal globalisation (another contradiction) provides the 'spaces' in cities and regions where the organisation and resistance on a socialist basis, from those who suffer most for the neoliberal depredations, can take place.
[45] Harvey, *The Condition of Postmodernity,* p.359.
[46] Stanley Fish (1980) *Is there a Text in this Class? The Authority of Interpretive Communities*. Cambridge, Mass.: Harvard University Press.
[47] In 2017 Harvey published *Marx, Capital and the Madness of Economic Reason*. (London: Profile Press.) The title identifies clearly the book's concerns; nonetheless 'media' is mentioned only three times, and the digital computer, the most consequential technology of our age, is discussed only in terms of the global production chain and the fact that, for example, the Apple computer is made in China, but that profit from its sale is realised in the USA (p.199).
[48] Harvey devotes an entire chapter to 'The Question Concerning Technology' in his 2017 book *Marx and Capital and the Madness of Economic Reason*. However, it is entirely derivative of Marx in *Capital* and is devoted to questions of labour and value and the 'technological fetish'. Ultimately, Harvey argues, as he does also in *Postmodernity*, that we need to assert democratic control over technological development to 'look for practical technological paths that address the crying need for new social relations, new mental conceptions, new relations to nature and all the other transformations that will

be required to exit from the current morass', p. 126. About how this control is to be asserted, again, as in *Postmodernity*, little is said.

[49] Noel Castree and Derek Gregory (eds) (2006) *David Harvey: A Critical Reader*. Oxford: Wiley Blackwell.

[50] Castree (2007) 'David Harvey: Marxism, Capitalism and the Geographical Imagination', p.103.

[51] Ibid.

[52] David Harvey (2017) *Marx and Capital and the Madness of Economic Reason*. London: Profile Press, p.112.

[53] Ibid., pp.112–113.

[54] Georg Lukács (1990) *History and Class Consciousness*. London: The Merlin Press, p.xxii.

[55] In his discussions on 'alienation' in *Postmodernity* (he refers to 'reification' only three times), he does so in connection with aesthetics, such as in art, literature, film, etc. Moreover, he does so through the lens of the main Marxist theoretician of 'postmodernism' Fredric Jameson, a theorist whom he draws from more than any other thinker except Marx. See pp.54–55 and *passim*.

[56] Harvey, *The Condition of Postmodernity,* p.117.

[57] Jean-François Lyotard (1979) *The Postmodern Condition: A Report on Knowledge*. Manchester: Manchester University Press, pp.4–5.

[58] Ibid. p.4.

[59] Harvey, *The Condition of Postmodernity,* p.49.

[60] Ibid. p.3.

[61] An indication of this disciplinary lack of attention is that the *Dictionary of Marxist Thought*, which seems last to have been published in 1998, even then had no entry for 'media'.

[62] For a writer who sees postmodernism as primarily ideological, it is notable that he mentions Gramsci's basic idea of ideological hegemony only in passing. See *The Condition of Postmodernity,* p.113.

[63] Raymond Williams (1990) *Television: Technology and Cultural Form*. London: Routledge.

[64] Stuart Hall (1973) *Encoding and Decoding in the Television Discourse*. Birmingham: Centre for Contemporary Cultural Studies.

[65] John Corner (1997) 'Television in Theory' in *Media, Culture & Society*, 19(2), 247–262, p.251.

[66] Directed by sci-fi producer-director Ridley Scott, '1984' was shown only once, during the Superbowl broadcast. This apparently only added to the ad's mystique and power and it was winning awards as recently as 2007. Rebecca Solnit, writing in *Harper's* magazine in 2014, stated that '1984' 'was made in an era of considerable anxiety about the future.' But also that the ad 'is the beginning of Silicon Valley's fantasy of itself as the solution, not the problem — a dissident rebel, not the rising new Establishment.' See Solnit,

'Poison Apples' *Harper's*, December 2014. https://harpers.org/archive/2014/12/poison-apples/

[67] Jean Baudrillard, 'Ecstasy of Communication', p.133.

[68] Terry Eagleton (1991) *Ideology: An Introduction*. London: Verso, p.47.

[69] Harvey, *The Condition of Postmodernity,* p.359.

[70] To answer this question, I will be drawing on the work of Arnold Gehlen, notably, his *Man in the Age of Technology*, first published in German in 1950.

[71] *The Condition of Postmodernity,* p.284.

[72] Wolfgang Streeck (2016) *How Will Capitalism End?* London: Verso, p.47.

[73] Ibid., pp.237–253.

[74] The historian Timothy Snyder sees the Millennial generation as a 'generation without history'. See his *On Tyranny*. New York: Tim Duggan Books, p.126.

CHAPTER 3

From Analogue to Digital: Theorising the Transition

> The distinction between digital and analogue representation is philosophical before it is technical.
>
> Chris Chesher (1997), 'The Ontology of Digital Domains', in *Virtual Politics: Identity & Community* in Cyberspace, David Holmes (ed.). London: Sage, p.86.

> The machine seemed to understand time and space, but it didn't, not as we do.
>
> Ellen Ullman, *The Bug* (2003) p.108.

> More and more, we are coming to realize that figures of thought rehearsed and repeated for centuries on end are falling victim to the digital revolution.
>
> Martin Burkhardt, *All or Nothing: A Digital Apocalypse* (2018) p.90.

'This all-or-none machine is called a *digital machine*'[1]

Technological change was very much in the air in the period immediately after World War Two. Computing was no exception. A once-sleepy field was woken by new political and economic imperatives. And so, at the cutting-edge of computer research, a transition was underway. Digital logic was being developed as a potentially more accurate and efficient form of information processing. At this early stage, leading thinkers in the field saw that the essential difference between the new digital machines and their analogue predecessors was something that needed to be discussed and so better understood. Norbert Wiener, for example, in his 1948 work *Cybernetics: Or Control and Communication in the Animal and the Machine*, put it like this:

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> There exist at present two great types of computing machines: those like the Bush differential analyzer, which are known as *analogy machines*, where the data are represented by measurements on some continuous scale, so that the accuracy of the machine is determined by the accuracy of the construction of the scale; and those … adding and multiplying machine[s], which we call *numerical* [digital] *machines*, where the data are represented by a set of choices among a number of contingencies … We see that for highly accurate work … the numerical machines are preferable … those numerical machines constructed on the binary scale, in which the number of alternatives presented at each choice is two.[2]

Wiener combined pioneering work in cybernetics at MIT with the research he did for the US Department of Defense. Cybernetics was a new and potentially game-changing branch of computer science at a time of sharpening Cold War tension. A defence priority for the US was an accurate and safe command and control systems capability that could target and steer its nuclear and conventional payloads.[3] Wiener's research suggested that digital computing was by far the more effective option for the military's needs. Digital cybernetic systems may have been the best for the task, but Wiener realised that a potentially serious ethical issue came freighted with this new technology. In *Cybernetics* he wrote that whilst 'it is advantageous' as far as is possible 'to remove the human element from any elaborate chain of computation', human control must be preserved 'at the very beginning and the very end' of the process.[4] In other words, although human beings are like his analogue computers in respect of their limited capacity for accuracy and speed, they must nevertheless always be in *initial* and *final* control of the command and control process, especially in respect of offensive weapons systems. People had to be involved at these critical junctures, Wiener declared, in order to make ethical assessments that were often context-specific and contingent. Human qualities such as trust and intuition and experience could not be delegated to a highly automated machine. However, in a 1950s Cold War context that increasingly threatened to become hot, the ethical legitimacy or otherwise of potentially war-winning weapon systems did not figure greatly in the generals' calculations, and so Wiener's requests for caution were disregarded.[5]

His feelings of anger at the military's lack of interest in an ethical approach were to be poured into his 1954 book *Human Use of Human Beings.* This was an extended theory on the need for human control over increasingly digital systems whose inner logic was specifically oriented towards removing human participation. In the book's appendix Wiener included a letter he wrote to the US military in response to a request from them for scientific papers concerning his work on cybernetics. In particular, they were seeking advice on how to perfect a 'controlled missile' project. He wrote that he would no longer help them, not even to provide copies of his research that was out of print. He went on in the letter to criticise the ethical vacuity of colleagues who had worked on

the atomic bomb, and who had chosen to become part of a military–industrial system that was creating the post-war computer revolution:

> The experience of the scientists who have worked on the atomic bomb has indicated that in any investigation of this kind the scientist ends by putting powers in the hands of the people whom he is least inclined to trust with their use.[6]

Wiener's experience showed how military expediency routinely overrode any ethical concerns regarding the development and application of computing. Importantly, this same expediency also brushed aside any lingering institutional curiosity regarding the broader philosophical questions surrounding analogue and digital computer systems and the nature of human engagement with these.

Wiener was active on fronts outside of the military, however. For example, the Macy Conferences were a series of intellectual gatherings that took place in New York between 1946 and 1953 to discuss new research in computing, philosophy, psychology and other fields. These had the specific aim of breaking down the specialist boundaries that existed between science and the humanities, to see what insights could emerge from a more interdisciplinary approach. A topic at the March 1950 conference was titled 'Some of the Problems Concerning Digital Notions in the Central Nervous System'. This included discussion on the analogue versus digital question, and was led by Ralph W. Gerard, an eminent neurophysiologist and psychologist. Gerard later wrote up a transcript of these discussions with Gregory Bateson, an anthropologist and linguist, the mathematician and physicist John von Neumann, and Norbert Wiener himself, on the characteristics of analogue and digital in respect of the nervous system and the brain. However, to read Gerard's account is to see how disciplinary boundaries remained firmly in place in their exchanges. Partly this was because simple matters of definition of the words 'analogue' and 'digital' immediately imposed themselves as problems. In one telling passage of Gerard's transcription, Gregory Bateson, the humanities scholar, comes over as someone outgeneralled by a roomful of world authorities on mathematics and computing, and so he confines himself mainly to asking questions:

> Bateson: I am a little disoriented by the opposition between analogical and digital. … It would be a good thing to tidy up our vocabulary. We have the word 'analogical', which is opposed to the word 'digital.' We also have the word 'continuous,' which is opposed to the word 'discontinuous'. And there is the word 'coding,' which is obscure to me.[7]

There follows a short and self-assured back and forth on the subject of definitions between the scientists von Neumann and Wiener. Then Gerard, another scientist, interjects by using a comparison that corresponds with the one Wiener used in his 1948 book and cited above. He does it in rather more redolent

terms than did Wiener—but also in terms that could, without too much imagination, be understood as being patronising towards Bateson, the outnumbered humanities man:

> Gerard: … an analogical system is one in which one of two variables is continuous on the other, while in a digital system the variable is discontinuous and quantized. The prototype of the analogue is the slide rule, where a number is represented as a distance and there is continuity between greater distance and greater number. The digital system varies number by integers, as in moving from three to four, and the change, however small, is discontinuous. The prototype is the abacus, where the bead on one half of the wire is not counted at all, while that on the other half is counted as a full unit. The rheostat that dims or brightens a light continuously is analogical; the wall switch that snaps it on or off, digital. In the analogical system there are continuity relations; in the digital, discontinuity relations.[8]

The discussions never did get much beyond this elementary definitional stage, and the Macy Conferences overall never came close to developing a systematic or even slightly promising comparison between analogue and digital machines. There was some discussion on the analogue and digital qualities of the nervous system and the brain, but it did not amount to much either and never involved Bateson. The transcript shows that Gerard—after flattering von Neumann for his 'expert tutelage' (at the conference)—was of the opinion that although the nervous system and the brain both have analogue and digital functioning—e.g. continuous and discontinuous (electrical signals flow and synapses fire)—research and understanding was still in its infancy. Von Neumann then seemed to close off discussion on the subject altogether, chiming in with the inflexible comment, almost a QED, that: 'It is very difficult to give precise definitions of this, although it has been tried repeatedly. Present use of the words "analogical" and "digital" in science is not completely uniform.'[9] The transcript suggests that the world-renowned physicist puts (almost) the last word in for science, leaving Bateson, the more philosophically-informed anthropologist, isolated and still 'disoriented' on the question.[10]

These faltering discussions did have a wider effect, however. They became representative of a general attitude regarding digital computing that was beginning to harden at the time. It was a tone shaped by a Cold War military-industrial complex attitude that helped ensure that a largely instrumental approach was taken in respect of technological development and application. And it was an instrumentalised and ethics-free approach that would take decades to come to light outside of the tight circles of an exclusive scientific community. For instance, the management theorists François-Xavier de Vaujany and Natalie Mitev have recently reviewed the Macy Conferences from a critical perspective and argue that they functioned as the foundations of the rise

of what they term the 'philosophy of the digital'. This was a 'philosophy' that dovetailed with the 1940s conception of the electronic brain or computer brain then emerging through the work of Alan Turing and others.[11] De Vaujany and Mitev see the Macy legacy as characteristic of a so-called 'representationist philosophy' in which the world and its objects are paralleled by symbols which can be 'manipulated according to logical rules to become "computable" symbols.'[12] Such an approach derives from nineteenth-century positivism, a philosophy that stresses an unshakable 'commitment to empirical facts', as Fredric Jameson puts it, and where the language of mathematics is considered the language of truth.[13] In particular, de Vaujany and Mitev argue that for many of the Macy delegates, fuzzy and 'uncomputable' human characteristics such as 'emotions, perceptions, sense-making and embodiment' are too subjective and therefore were 'not part of the design or description of these information processes.'[14] Their analysis of the conferences indicates that notwithstanding their stated interdisciplinary intentions, other views—such as the phenomenology of the humanities-trained Bateson, for example, where a whole tradition stretching from Henri Bergson through to Maurice Merleau-Ponty sees embodiment and subjective experience as an important factor in understanding the world and its reality—went unheard.[15] The Macy Conferences did not signal a total and unambiguous victory for the scientistic and positivist view of the human as being a digital and computational creature. But without a leading and authoritative science figure such as Wiener around to drive the public debates on the ethical and ontological questions, they simply petered out.[16]

The last Macy Conference on cybernetics was held during April 1953. In July of that year, President Dwight D. Eisenhower forced an armistice in the Korean War after threatening to use nuclear weapons north of the 39th parallel. In 1949 the USSR developed its own bomb and so the Cold War was now a war of technologies of mass destruction—and also a secret war. And so, in keeping with the exigencies of secrecy surrounding military technological development, an instrumental *technocratic discourse* on the respective qualities of analogue and digital machines retreated from public view into what Paul N. Edwards called the 'closed world' of top-secret projects, enormous government contracts, and covert military applications. In the testing labs and strategy seminars of the Pentagon and its numberless branches, Wiener's ethical concerns and metaphysical speculations had no place.[17] As Edwards tells it in his Foucauldian analysis of the power discourses in the US military industrial complex of the Cold War, it was *ad hoc* competition between narrowly disciplinary-trained research teams and government agencies that created the foundations for the computers that we know today.

In the 1940 and 1950s most existing computers were analogue. These were massive stand-alone, electricity-devouring machines built by corporations such as IBM and Remington Rand, and they crunched numbers and processed data on punched card, solid state, or vacuum tube computers for government departments and contractors around the USA. Alongside their great size and

cost, their very existence at the heart of government and big business constituted a powerful source of institutional resistance to the new digital machines. In their early prototypes, the digital machines were experimental and not very dependable. Even by the late 1940s when workable and more reliable and far faster digital machines were developed, they still faced obstacles in the vital command and control function that they were required for. For example, the human as interpreter of data, such as a radar operator, still functioned comparatively well in analogue form.[18] The eventual fate of analogue computers was sealed, however, when the USSR developed the bomb. In theory, Soviet long-range bombers could now strike US cities, and so the generals and politicians pressed its scientists, engineers and computer specialists to come up with a comprehensive air defence system for continental North America. The perceived mortal threat to the homeland was an unprecedented situation in US history. For the first time there was a need to defend the *whole country at the same time* from potentially devastating air attacks—and so this called urgently for new thinking and new technologies.

The history of the shift to automated digital systems is unavoidably a technical one. But technological forms and functions were shaped by particular ideological choices that emerged out of the inter-agency closed world discourses within the overall context of US government Cold War strategy. And these were discourses that were themselves shaped by a military-industrial complex rationality.[19] The details need not detain us too much here, save to say that a continent-wide air defence system called for efficient and fast *networked* systems, something that siloed analogue computers could not provide. And so, a networking logic was set in train, beginning with the founding of the Defense Advanced Research Projects Agency (DARPA) in 1958, and then the Advanced Research Projects Administration (ARPANET) in 1969, both of which were precursors to the commercial internet and web. But this closed world of technology development, containing the 'hidden history' of its formation, also concealed a paradox concerning automation and the role and function of the human. As Edwards argues: 'Computers were used first to automate calculation, then to control weapons and guide aircraft, and later to analyze problems of command through simulation. The final step in this logic would be to centralize it and remove responsibilities from lower levels' as the 'ultimate goal'.[20] This was the technocratic dream of the 1940s generals who were dazzled by the possibilities of Wiener's cybernetics. Automated and comprehensive digital systems would act upon a chaotic and dangerous world, a world to be rendered controllable and orderable as a rationalised time and space by 'intelligent' computers under the 'ultimate' control of a military-political elite. The paradox is that the prosecution of war (and the function of the economy) has never been separate from the very human world of individual and collective irrationality, of conceit and paranoia within a socio-cultural and political context of uncertainty—and not least from a technologically-induced hubris.[21]

In such an environment, questions concerning the nature of analogue machines versus their digital counterparts were beside the point. Speculations on the analogue-digital divide as a philosophical–ontological question would have sounded absurd in the planning rooms of the Pentagon or in the laboratories of private contractors. A new language had established itself around technical challenges and it called inevitably for instrumental solutions. These were in the sole purview of a military-industrial complex which, as Eisenhower belatedly warned, was led by 'a scientific and technological elite' that was in danger of capturing public policy.[22] As to the deeper (and logically following) questions of the role and function of humans vis-à-vis analogue and digital technologies, these were no longer even asked. For three decades the closed world discourse reigned. As Edwards put it, the 'confusion of philosophy [was] gradually replaced by the precision and clarity of science.'[23] Only computing could order the world in the required way. And with networked computers the only feasible solution to Cold War exigencies, digital computers began to shape the technological core of the world's foremost military and economic power, first in defence systems, spreading then into business, and then further into culture and society.

By the 1980s (when, incidentally, digital parallel computing finally became superior to analogue processes)[24] the US public, and publics of the developed world more broadly, became gradually aware of a more encompassing computer revolution that went beyond the scare stories of military applications and the more anodyne applications of corporate business and production systems.[25] A revolution was underway, and it was to be a 'personal' one in the form of the 'personal computer'. As the public were being introduced to this new world of individual possibility by ads such as Apple's '1984', behind the high-tech scenery, digital had already triumphed over analogue in the battle for the soul of the computer. In this new entrepreneurial era of Bill Gates and Steve Jobs, the love-children of the union between the military–industrial complex and the 1960s counter culture, philosophical questions regarding technical processes were reduced to epiphenomena; ethics and morality became a separate sphere altogether, one concerned with issues of privacy and how computers should be used and so on—not what these new computers actually *were*. Wiener's 'all-or-none' machine was thus able to emerge from its closed world chrysalis as a fully-fledged techno-logic—and now had the field, indeed the world, all to itself.

Are We Analogue?

The question is one that does not readily suggest itself, although Wiener definitely had a vague presentiment of it.[26] This is because important philosophical concepts developed at the dawn of Western thinking on the nature of the human relationship with technology meant that 'are we analogue?' is difficult

both to conceive and to ask. Beginning in Greek antiquity, there was established a basic ontological *duality* between humans and their tools, and between technology and nature. Two important arguments, attributed to Democritus and Aristotle, illustrate this. First is that 'technology imitates nature'—the idea that humans looked to nature for instruction on how to survive and succeed through technology. In Democritus, the skill of the spider in the action of 'weaving and mending, or the swallow in house-building' are examples of the cues in nature that empowered humans to adapt and control their environments.[27] Second and implicit in the first argument is that according to Aristotle there is an ontological distinction between natural things and artefacts.[28] And so, to say that humans imitate nature in their tool development, and that there exists an ontological division between nature and technological artefacts, is to say that humans exist *apart* from nature, and that their technologies are simply imitations of it.

The branches of this ancient trunk have grown in many directions over the past twenty-five centuries. In the modern period, however, the deep roots of Democritus and Aristotle have acted as a limiting and shaping factor upon how we how nature, technology and ourselves. So much so that in the age of digitality the most influential theories on the relationship with technology now appear as limited and partial accounts for understanding the truly radical nature of digital ontology. We saw that Marx, for instance, thought of technology as a kind of black box that when opened and analysed 'discloses man's mode of dealing with Nature and the processes of production'[29]. The exploitative logic of capitalism is revealed, for him, in the very design of a given production-line machine itself: in the number of workers it replaces, the speed at which it outpaces them in the labour process, and so on. And the factory machine, just like the bullock pulling the plough with the tithed peasant in tow, was conceived in the context of the relation of production at a given time in history. Marx's 'man' stands essentially apart from the technology (or is an accessory to it) and under capitalism is oppressed and exploited by it to a much more efficient degree.

Georg Lukács had developed Marx's account of commodification and the fetish of commodities into his own influential theory of *reification*. Like Marx, Lukács considered that technology and its specific forms have arisen out of the historical relations of production. As he phrased it in his *History and Class Consciousness*: 'economic forces determined the course of society and hence of technology too.'[30] He uses this to argue against the idea inherent in liberal bourgeoise ideology that 'technology functions like a societal "natural force" and is obedient to "natural laws"'. He insists that technology, nature and man are discrete forces, with the particular historical economic model and its relations of production acting as their binding social web. For Lukács, like Marx, capitalism-derived technology *acts* upon the individual in the process of commodity production. In the action of production, the worker's own labour becomes 'something objective and independent of him'. However, for Lukács the worker becomes reified not only from the action itself (from the labour) and from the

product of the labour—but also from the objective social and economic relations that frame the action.[31]

In the Frankfurt School, too, we find the notion that technology forms the individual and class. Theodor Adorno and Max Horkheimer were much influenced by Lukács's idea of reification. They were also troubled by what they saw as the logical consequence of his ideas, ideas drawn originally from Max Weber on the effects of increasing mechanisation, specialisation, and Taylorist calculation within capitalist competition. Adorno and Horkheimer, and later Herbert Marcuse,[32] developed more fully than anyone else the concept of *instrumental rationality*—seeing it as an inevitable outcome where 'reason's old ambition to be purely an instrument of purposes has finally been fulfilled.'[33] For them, the more equable reason of antiquity and the promise of an Enlightenment that reflected upon the means for achieving human potential in a positive way, had regressed into irrationality through capitalism's overheated concern with pursuing rational ends. And it was machine technology that made this possible, if not inevitable. In this particular interpretation Lukács thought that his acolytes had gone too far and that they had checked themselves into the 'Grand Hotel Abyss'[34] with their depictions of an almost total system of control. But for Adorno and Horkheimer, 'Technology', especially in the wake of its instrumental achievements in Auschwitz and in Los Alamos, 'aims to produce neither concepts nor images, nor the joy of understanding, but method, exploitation of the labor of others, and capital.'[35]

Exploitation. Reification. Instrumentalisation. These processes are still with us. They pervade current capitalism as they did capitalism in its early and more mature forms. They constitute the very essence of capitalism. And capitalism has globalised since the 1980s with its logic now seeping into every nook and cranny of life. And every year dozens of books are published on economics, on politics, and on the environment, which argue that the situation is even worse today in terms of capitalism's depredations. Not only that, others say that capitalism *itself* is in a terminal state and speculate how it will 'end' using forms of theorising that no longer necessarily follow the traditional Marxist teleology or dialectic.[36] In other words, there is an *impasse* or poverty of theory in terms of our understanding of the technology-driven trajectory of twenty-first century capitalism. More particularly, there is a serious lack of insight into how and why, as McKenzie Wark has expressed it in the book *General Intellects*, 'information technology seems to [be] something qualitatively different to previous regimes of mechanical … means of production.'[37]

To adequately theorise the transition to digitality means that we need now to look for different lines of cause and effect within what are undoubtedly radically transformed circumstances. The rise of digital means that we need to consider again what capital is and what capital does by way of digital's turbo-charging of capital's own preconditions. Moreover, pervasive and networked digitality gives the processes of exploitation, reification and instrumentalisation a scope that was not possible in earlier (modern) iterations of capitalism, and which as far as machine technology goes, are effects that Marx, Lukács, Weber, Adorno and

Horkheimer, and Marcuse could not have dreamed of. To think more clearly about the nature of digital and our human relationship with it, we need then to consider its relation to its opposite—the *analogue*. And from that comparison we need to ask a question that has never really been properly asked: are we ourselves analogue beings?

Arnold Gehlen implicitly enjoins us to do this in his book *Man in the Age of Technology*, which was published in German in 1949 and translated into English only in 1980.[38] In it Gehlen connects social theory with sociology and human biology with social psychology to fashion a 'philosophical anthropology' perspective on the human relationship with technology that is both novel and highly suggestive. It's an approach that gets us to the roots of how it is that our species evolved as creatures of technology (or 'technique'[39]) and unlike other species in nature are inseparable from it.[40] As he puts it early on:

> Technique is as old as man himself, for when we deal with fossil remains it is only when we come upon traces of the use of fabricated tools that we feel sure we are dealing with men.[41]

But what is the essence of this 'deep-seated bond' between what he terms 'man and technique'?[42] Gehlen argues that although it is tool use that distinguishes us from most other species, unlike most other species, we would not have survived in our evolutionary drift without connecting at some distant point in our pre-history with the means (tools and tool use) with which to overcome the 'weakness and helplessness [our species feels] when confronted with the powers of nature.'[43] Gehlen argues that in our present evolutionary state, in our present physical and cognitive state that stretches back 200,000 years, we are born 'unfinished'—deficient beings who are 'poorly equipped … with sensory apparatus, naturally defenceless, naked, constitutionally embryonic through and through, possessing only inadequate instincts.'[44] The human drift toward technique was necessary for survival and once established acted as the mediating form between 'man and his organic and instinctual deficiencies' and the hostile natural environment.[45] This adaptation, moreover, formed a dependency that has left us in a state of arrested development in terms of nature's evolutionary vigour.[46] As Gehlen puts it, increasing proficiency with technique relieves humanity 'of the necessity to undergo organic adaptations to which animals are subject, and conversely allows him to alter his original circumstances to suit himself'[47]. In other words, we long ago were locked into technique, but this stalled any evolutionary development and left us in a now-congenital unpreparedness for life *without* technique. This in turn set us on a path of human-technological dependency–development that made us what we are—creatures who became so adept at transforming our surroundings through technique, that we are the only species able to live and increase upon every corner of the Earth, reducing our world, in effect, to human dimensions, to the human-scale, and able to subject it to human-technological potential.

The Analogue 'Circle of Action'

Gehlen is not concerned so much with *what* characterises the essential connection in the human–technology–nature relationship, so much as he wants to establish that there *is* an essence. However, he does hint at the analogue nature of technology's 'ultimate determinants':

> If by technique we understand the capacities and means whereby man puts nature to his own service, by *identifying nature's properties* and laws in order to exploit them and to control their interaction, clearly technique, in this highly general sense, is part and parcel of man's very essence. It *truly mirrors man*… (emphasis added).[48]

Gehlen's insights provide a basis upon which to discuss and contextualise what I mean by the term analogue, and where humans fit within its operational compass. Unlike the impatient von Neumann who seemed irritated by a lack of definitional precision in the 1950 Macy Conference, and so offered no way forward, it is more fruitful if we begin with the etymology of the word and look for clues within it that can help us to move on. The term analogue—notwithstanding a slight renaissance in hipster music circles—is rapidly fading from our collective vocabulary. In everyday use it often referred to pre-digital consumer goods such as radios, or TVs, or record-players, and was understood mainly as a technology descriptor. But it's much more interesting than that. One OED definition of analogue is as 'a person or thing seen as comparable to another'. This is derived from the Greek word *analogon*, which means 'equivalent' or 'proportionate'. This is rather different from dying memories of a 1970s Sony PS-6750 Stereo Turntable or the David Bowie vinyl disc that would spin on it. The OED offers a *completely* different realm of understanding from the everyday definition. It's human-centred for a start. It tells us that 'equivalent' or 'proportionate' are about the relationship between people and things—in the context of their environment. I wanted to preface 'environment' just then with the word 'immediate'—but I'll come to that shortly.

From the OED definition we can see that the hammer, for example, is analogue in that it is 'equivalent' to the human hand. Not only that, and to pick up Gehlen once again, the hammer is an analogue 'strengthening technique that extends the performance of our bodily equipment.'[49] Gehlen makes the distinction between three types of technique: first is the *strengthening technique*, such as the hammer, or more recent technologies such as a microscope or bullhorn, which augment or amplify natural human capacities; second are *techniques of 'facilitation'*, such as to be found in, say, a wheel or a bridge or an automobile, and which act to relieve the burden upon organs and eliminate effort; and third are *replacement techniques* such as airplanes or ships, which act in place of organs or capacities not possessed by humans. This human multifacility with technique is hugely impressive if separated out in this way. It also makes even

more remarkable our evolutionary drift toward tools and tool development. At its most elementary (and idealised) level in pre-modern days, this relationship with technique finds expression in what Gehlen terms the 'circle of action'[50], an ancient—*the* most ancient—dialectical process which 'goes through object, eye, and hand and which in returning to the object concluded itself and begins anew.' Explaining further, Gehlen lyricises on the concept:

> The fascination exercised by the analogous process of the external world bespeaks a 'resonance' which conveys to man an intimate feeling for his very nature, by focusing on what echoes his nature in the external world. And if we today still speak of the 'course' of the stars and of the 'running of machines', the similarities thus evoked are not in the least superficial; they convey to men certain distinctive conceptions of their own essential traits based on 'resonance'. Through these similarities man interprets the world after his own image, and vice-versa, himself after his image of the world.[51]

Gehlen intimates at various points (such as in the above quotation) that this is a feedback loop of action that over thousands of years of trial and error has made it possible for us to create *ourselves* and re-create our *environment*. Moreover, the circle of action is profoundly analogue in that by imitating nature though techniques that correspond to nature or are in some way proportionate with nature—we 'resonate' with nature, become as one with nature and find our own image reflected in nature.

Except that Gehlen says also that some technologies are more abstract than others, meaning that some were created 'without reference to nature.'[52] He claims that the wheel, or the flint blade and other fundamental inventions are simple testimony to human inventiveness and intellect, and so constitute technologies that are '*nature artificielle*'. Indeed, man, too, for Gehlen, is an artificial creature, so profound is the relationship with technology.[53] Well, yes and no. Humans *are* constituted *as technique* and so have always been posthuman. But this does not mean that they are abstracted from nature at this most basic level, and it does not mean that the wheel, or the knife or even the airplane or the automobile are not in themselves analogue.[54] This is an important point in my comparison of analogue with digital. It allows me to bring in a rare and insightful perspective from more recent times that explicitly makes the case that humans are essentially analogue creatures in a digital world. In an underappreciated essay on nostalgia and digital communication among the Ecuadorian diaspora, Silvia Estévez takes up the issue directly. She begins with a revealing observation from Charles Petzold, one of the authors of the Microsoft Windows program: 'people and computers are very different animals, and unfortunately it's easier to persuade people to make adjustments to accommodate the peculiarities of computers than the other way around.'[55] However, for Estévez, computers are more than simply machines determining our behaviors: they

are *antithetical* because we are analogue and computers are digital. Estévez describes the analogue-human connection: 'Steam powered trains or ships were analog machines, whose operation simulated processes that people had seen before in nature and in the functioning of their own bodies.'[56] This is partly the mimicking proposal that we see in Democritus, Aristotle, Gehlen and elsewhere. But note again that line 'processes that people had seen before in nature'. Estévez follows up this point by remarking: 'Moreover, their [analogue technologies] activity crosses time and space in a *visible way* that allows us to *grasp the link* between a movement and its effect, the process, the continuity.'[57]

The observation is both simple and remarkable. Estévez tells us what we already know, but at a deeper level of consciousness, and so with more profound consequences. When we see a technology in operation, be it a train hurtling past or a jet plane zooming high overhead, we *recognise* what is happening; we can see and understand cause and effect in action. The train or plane doesn't materialise from nothing and then de-materialise back into nothing; they move through time and space in a motion that has continuity—and to remind ourselves what R. W. Gerard said at the Macy Conference: 'In the analogical system there are continuity relations'[58]. Of course there are. Because humans created techniques based upon what they found around them, what was immediately to hand in nature, and in their application, their tools followed nature's lead in that they functioned in time and space in ways familiar to their own experience. The airplane does what the eagle does, and the train does what a human does when, say, carrying weight—it moves through time and space in ways that are recognisable. They may be far more impressive in that they are faster and stronger, but what they do is to follow the rules of what analogue is and does. And Gehlen's example of the wheel, a technique 'so abstract'[59] that certain cultures never attained it, is nonetheless analogue because although it is a pivotal technology, it does not appear as from another world. It is the creation of humans who are part of nature and it fits with analogue criteria in that we are able to '*grasp the link* between a movement and its effect, the process, the continuity' from the relatively fixed human perspective in time and space. In this process of technology recognition, the early important tools that humans created were created as part of the circle of action. This means that 'analogue' only really makes sense if it acknowledges human participation in the ways just described.

Postscript on the 'Circle of Action'

I will discuss shortly what being analogue in a digital-governed world means for us as individuals and for Harvey's post-post-modern vision for Marxism as a project of freedom in the future. However, I will conclude the discussion on Gehlen's insights with some more thoughts on his circle of action and what its logic meant for the historical relationship between 'man and technique'—and what it meant for the future as he saw it.

Firstly, Gehlen was an old-school conservative, harbouring a worldview that coloured his philosophical anthropology to a degree that needs to be acknowledged.[60] For Gehlen, modernity and the rise of industrialisation were unfortunate.[61] His circle of action is for me a compelling accounting for the deep bond between humans and technology. However, for Gehlen, in its fullest and most unadulterated expression, it constituted a simpler and more preferable time. This was the vast majority of the historical time; the tens of thousands of years where 'organic' technologies of stone and flint and wood and basic metals of iron and bronze were the materiality of technique. Such technologies derived from nature did not disturb the rhythms of nature, and so the innate 'need for stability' in the environment, over the long primal stage of the relationship, in a world 'not yet influenced by science', could be sustained.[62] This was Gehlen's vision of a pre-industrial semi-harmonious semi-idyll. Being able to control and impose a protective stability upon nature meant that humans could begin to use their intellect to consider and exploit the *potential* in the relationship with technology. And it is our predisposition to adapt and develop tools in more complex and open ways which defines our species. As Gehlen puts it, it is the cognitive capacity to react to a tool by thinking 'I'll take this along, I might be able to use it' that is the capacity to see in the thing its 'potential usefulness'.[63] This aptitude gave developmental momentum to the circle of action, which at the primal level enabled humans not only to survive, but to settle, to begin to lay down forms of civilisation, of culture, of institutions and of community—and to construct forms of *Gesellschaft*. It needs to be remembered that over this long pre-modern phase, Europe at least was a world of disease, of short life span, of violence and oppression, of irrationality and all kinds of belief-systems—and was framed by the social relations of slavery, feudalism and absolutism. But from the late-Middle Ages at least, the nature of potential was beginning to be transformed.[64]

By its nature 'potential' is an open-ended process with trial and error, diversity of contexts, diversity of needs and diversity of demands always providing the necessary drive for further, *ad hoc* and contextually-arising innovation and discovery. This momentum of continual tinkering and invention, however, was to meet with a mental (and later economic) revolution that would transform the human relationship with technique forever and infuse a new quality into Gehlen's naturalistic and pre-modern circle of action. The scientific revolution of the early seventeenth century was the catalyst. Francis Bacon's *Novum Organum* of 1620 outlined the scientific method, which constituted the intellectual breakthrough that would lead to the Enlightenment, industrialisation and capitalism. Bacon declared that what is needed is that:

> … the entire work of the mind be started over again; and from the very start the mind should not be left to itself but be constantly controlled; and the business done … by machines … [And] in any major work that the

> human hand undertakes, the strength of individuals cannot be increased nor the forces of all united without the aid of tools and machines.[65]

Bacon's method was more than a philosophical handbook for uncovering facts about the world. It was a proposal for a new relationship with technology, through science and method, to remake the world, to sweep it clean of the 'Idols' or 'Illusions' that stood in the way of human reasoning. Thousands of years of relative harmony with nature by adapting it through the circle of action were to be ineluctably transformed by a new guiding principle: science and technology were to be reoriented toward a new idea of *progress* characterised by efficiency and power and by the development of new machines envisioned by a new mind—an industrialised mind.[66] Focussed and systematic patterns of innovation and discovery began to replace the organically directed improvisation and contextual diversity that had characterised the human relationship with technology since pre-historic time. The open potential that existed in this relationship was now to be scrutinised by the method-trained, reasoning and universalising mind of the natural philosopher, who would soon be known as the scientist. As the industrial revolution got underway, the potential of technology became separated from the potential of the human. Or, rather, our potential was subsumed under that of technology's. Technique was no longer shaped by naturalistic technique,[67] but was 'set free' by reason to become fully-fledged and nonorganic 'instruments of purpose.'[68]

If we accept that we are not separate from either nature or the technologies we derived from imitating nature, and that to be considered analogue we must be able to comprehend the link between a technology's movement and its effect, then with the arrival and rise to domination of digital logic we are *bound* to ask where we stand in relation to the analogue and digital. And so I will turn to a consideration of the analogue human in our present circumstances—a world 'turned into a gigantic word processor, orbited by satellites and shrouded by an ether of information.'[69]

Digitality

The last quote is from Martin Burkhardt's book *All or Nothing: A Digital Apocalypse*. It is a useful little book, and one of the few that make reference, albeit briefly, to analogue in a critical comparison with digital in the human context. This gives more of the flavour:

> Although analogue reality will survive digitalisation, we can already sense that it is deteriorating into an atrophied likeness—a facade or ashen shadow—of itself. In its digital mode of presentation, reality's effects are far more potent: seemingly infinite, lasting forever, everywhere.[70]

Burkhardt's slim volume continues in a style reminiscent of Paul Virilio: a heightened prose that is pitched at a sky-high level of abstraction. This kind of theory is necessary, but we need also to see it for what it is—a logic that is sound but pushed to the brink. In this, Burkhart, like Virilio, sits at one end of a spectrum, espousing ideas that we can *work back from* toward more grounded and tangible reality. Burkhardt's vision is apocalyptic, but there is no sense in his book why this is so, and why the logic of the digital is 'far more potent' than analogue, or what analogue's own 'mode of presentation' might be.

To get to a more concrete comparison, we need to go back to Silvia Estévez and her insight into the recognition quality of analogue technology. But first to return to Arnold Gehlen's philosophical anthropology once more: in *Man in the Age of Technology*, Gehlen makes the interesting connection between technology and *magic*. Citing the work of the philosopher and psychologist Maurice Pradines,[71] a follower of Henri Bergson, Gehlen makes the point that in respect of magic there are 'remarkable similarities found in the magical practices of all races and civilisations [and so they must] involve something anthropologically fundamental.'[72] Gehlen asserts that the ancient aura of magic is something that still lies deep within our psychological relationship with technology. This is especially so with respect to those moving (animated) technologies he terms 'automatisms' and 'mechanisms'. Gehlen writes:

> The fascination with automatisms is a prerational, transpractical impulse, which previously, for millennia, found expression in magic—the technique of things and processes beyond our senses—and has more recently found its full realisation in clocks, engines and all manner of rotating mechanisms.[73]

Science fiction writer and futurist Arthur C. Clarke made the same point in the early 1970s when he wrote that 'Any sufficiently advanced technology is indistinguishable from magic'.[74] Adorno and Horkheimer, too, theorised the nature of magic in *Dialectic of Enlightenment*, observing that 'Magic like science is concerned with ends, but it pursues them through mimesis, not through an increasing distance from the object.'[75] What is 'magical' about digital? We might begin by considering that magic, by its nature, is never apparent, and its workings are permanently shrouded in mystery. This is where Estévez's idea that analogue technologies have the quality of recognition becomes useful once more. Recall that she writes that a quality of analogue is that we can '*grasp the link* between a movement and its effect, the process, the continuity.' The stage magician uses sleight-of-hand to pull the dove from the top hat. Watching, unless we know the trick, we cannot grasp or recognise the continuity or link between the non-existent dove at one moment, and its fluttering and all too real existence the next. To recognise something is to render it non-mysterious, and apparent. Not to recognise is to give scope to our ancient pre-rational impulse. Of course sophisticated late-modern analogue technologies such as the

telegraph, the telephone and television stretched the limit of the criteria of recognition and apparency. But they were never mysterious or beyond our understanding in terms of their time and space shrinking capacities. If you look at the early television experiments of John Logie Baird in the 1930s, for example, you see that there is no mystery involved in its lights, its whirring rotors and its flickering projections. You can see and grasp the entire movement and effect of the clunky-analogue image-transmitter-image apparatus all set up in a glass case in the Science Museum in London.[76]

Digital machines, however, do not function like even the most sophisticated analogue machines. There is no continuity to be stretched and no movement or link that we can even begin to grasp, because there is no comparison. In networked computing the diffusion of the signal and speed of operation are beyond our comprehension, beyond anything we can recognise in nature. As Burkhardt describes it:

> Electricity enables any [digital] sign to travel the world at the speed of light; likewise, it permits a vast number of signs to be copied in an instant. Needless to say, the laws of physics still apply, but since the transformation happens so fast, we cannot follow the logic of distribution.[77]

Most of us do not even try to grasp the logic of digital. We did not ask for it, but it was offered as a choice that we could not refuse. And so, the smartphone or the laptop, at some level of consciousness, are objects of fascination, of magic, possessed of qualities we cannot fathom but yet quickly become dependent upon. And as users we enter a virtual world of make-believe, literally so, in that we willingly suspend rational states of belief in a way that did not apply to any analogue technology in history. In the early twentieth century people thrilled at the novelty of the telephone, but also thought it to be 'phoney'. By describing it as somehow unreal, we were rejecting its magical qualities even if what it permitted was difficult to fully comprehend or recognise. The digital network, by contrast, is magical because we accept its virtuality, its non-materiality, as evidence of its presence as a non-presence. Moreover, mostly we do it unsceptically, unthinkingly, because somewhere deep down in us we feel that it is not really of this analogue-derived world. And so its very alienness, coupled with our dependency upon it, makes the suspension of belief, and the implicit or unconscious attribution of a magical quality to it, the path of least cognitive resistance. Burkhardt again:

> [With the] click of the mouse … the user is teleported at the speed of light from one server to another—from Singapore to Palo Alto. Indeed, how the website appears often does not correspond to a unified space; instead it represents a simultaneity of different spatial points. And with that the browser cashes a check that no physical body could ever pay: being at different locations on the globe at one and the same time.[78]

With analogue technologies our species began to adapt the world to suit our needs; to make it proportionate and equivalent to us; to make it human-sized, apparent and graspable. Within the logic of digital space, however, a digital magic underpins the relationship as an ironic creation of science. Computer science created a technology that its early philosophers did not try too hard to distinguish from its analogue predecessor. And they did not think at all about what this technology's rise to dominance would mean for the ancient relationship with technique. Now networked and ubiquitous, this digital magic makes the physical world disappear, and we disappear with it, and into it. In the magical aura of connectivity, we are not isolated individuals in front of a glass screen but part of a there/not-there world where (so we are told) almost anything, good or bad, is possible. But this form of magic, to paraphrase Adorno and Horkheimer from the quote above, is *science-magic* that is intimately and ultimately concerned with specific ends—a purpose with no apparent means—and the pursuance of those ends of speed and efficiency and exactitude through the ungraspable means of diffusion and discontinuity. In historically short order, however, this logic has served mainly to increase the cognitive distance of the human from both the physical world and the instrumentally-charged virtual world that it has erected everywhere but which exists nowhere.

The Allure of the Magical-Digital

To end this section, I will look at the principal logic of digitality, which is *automation*. In the postmodern evolution of technique, the Lukácsian concept of reification, building on Marx's theory of alienation, reaches a new point of negative refinement in digitality. Before that, however, I will say a final few words about the relative lack of attention given to the analogue-digital ontology and offer a rationale for this.

The inability of the Macy Conferences to get beyond even the beginnings of a discussion on the analogue-digital ontology might be put down to bad luck, or a lack of assertiveness by the humanities man Gregory Bateson, or a want of persistence by Norbert Wiener, or a failing in both of them to follow and promote their ethical and philosophical instincts come what may. None of it would have mattered. Ultimately, it was the supreme political imperatives of the Cold War that choked off any possibility for free-thinking between philosophy and science regarding the position of the human in the context of cybernetics. The closed world discourses around the needs of national defence in the nuclear-capable countries, especially in the US, meant that non-instrumental speculations were superfluous in those places where actual thinking and research were being done. An obvious effect of this was that both the academy and public were intellectually and perceptually unprepared for the computer revolution of the 1980s. Consequently, the critiques that did emerge to meet the new technological age, either from traditional critical theory and neo-Marxism, or by

thinkers influenced by the new 'postmodern turn', were not really equipped to develop an understanding of what digitality signified in the context of a diminishing analogue world.

Economic globalisation was the main vector for the computer revolution. Emanating primarily from the US, it spread its logic and productive capacities towards 'flexible accumulation' with great success.[79] The spectacle of change was such that neoliberal globalisation's economic and political dimensions tended to obscure digitality's ontological consequences. Many on the left, such as David Harvey, did not see much beyond the 'job destroying' power that digital technology possessed for the working classes. There were some salient exceptions, however.[80] Neil Postman's 1992 work *Technopoly*, for example, saw the rise of computing as imperilling democracy, politics and culture through rule by instrumentalised logic.[81] Notwithstanding the value of Postman's book, it was as nothing compared to the general enthusiasm that neoliberal ideology bestowed upon computer technology. Postman's approach was standard critical theory/political economy. It was well-received in the academy and even made it to some popular talk shows in the US. However, and unlike other thinkers who also gained some prominence at the time, such as Francis Fukuyama, for instance, Postman's critique was up against a force and complexity of technological change that was not always clearly understood by ordinary people. Neoliberalism generated such transformation that, as Postman himself put it, 'the world in which we live is very nearly incomprehensible to most of us'.[82] It was a world, in other words, where most of us were eagerly attracted to the solutions promised by the magic of computers and so were primed to lay prostrate before what Theodore Roszak had earlier seen as 'the cult of information'.[83]

Critics such as Postman came from the broadly new left traditions of the 1960s. Many were influenced by strands of Marxism and critical theory that had some focus on technology. However, they tended to see computing as principally a super-efficient variant of existing capitalist forms of exploitation, and not as something qualitatively new and requiring new ways of thinking about it. Others, such as Mark Poster, in his 1995 book *The Second Media Age*, chose instead to engage with computing through a cultural theory of postmodernity.[84] In his book Poster viewed the new digital technologies as heralding the potential for new 'subject positions' through web interactivity and VR, both then at nascent stages of development. His critique, though quite influential at the time, reads as quaint today, fascinated as it is by the almost magical possibilities embodied in such innovations as email and Multi User Domains (MUDs), from where a much 'richer' communicative world than that afforded by face-to-face life could be within our grasp.[85]

Away from the more refined grain of cultural theory and postmodernity, others drew inspiration from the realms of cyberpunk; from novels such as William Gibson's *Neuromancer* (1984) and Neal Stephenson's *Snow Crash* (1992), in particular.[86] In this sub-genre we can find some considered and often positive perspectives on digitality such as in Mark Dery's *Escape Velocity.* In the

1990s, cyberpunk's dystopic tropes mixed with critical theory, and with some Paul Virilio, to generate yet more perspectives. We find examples in Arthur Kroker and Michael Weinstein's *Data Trash* (1994), or in Arthur and Marilouise Kroker's *Digital Delirium* (1997), where a William Burroughs-type prose, containing lines (many of them) such as 'It might be a slow ride to suicide and it's a fast trip to digital delirium' give a sense of its utility as concrete political insight into the condition. More interesting from a philosophy and science perspective is Margaret Wertheim's *The Pearly Gates of Cyberspace* (1999), where she argues that digital technology places us at a crossroads.[87] With patience and insight and an adequate appreciation of what cyberspace actually means, she argues that we might get lucky and be 'privileged to witness the dawning of a new kind of space (and time).'[88] She equates our own time with the age of Copernicus, when time and space were being thought anew. She argues that we need to draw on the lessons of history in order to rethink our world, seeing cyberspace as the child of science but also the servant of humanity. Unfortunately, it was a subject and an idea that Wertheim never really followed up on.

As the nineties became the noughties, more hopeful Marxist philosophers such as Michael Hardt, often with little familiarity with theories of technology or media, would nevertheless note that the 'network of the multitude' could be the critical factor in the anti-capitalist and anti-globalisation upsurges of the period, an historical-dialectical use of the tools of globalisation to undermine or destroy it.[89] Hardt is a good example of the narrow Marxist thinking of the time which still saw technology and media as Marx himself did in the Victorian age, as an aspect of the class struggle, and not as social-revolutionary in itself. And those others—often ex-Marxist critical theorists—who were swayed to a greater or lesser degree by the integrated postmodern turn would devote much of their semi-hypnotised and fascinated energies to the effects of early digitality upon culture, or literature, and tended to discern opportunities or problems with digitality according to their research interests, and not as an ontological or political problem. Critique of digital continued in its various forms from Manuel Castells, Kevin Robins and Frank Webster in the 1990s, to Lev Manovich and Cass Sunstein in the 2000s. And it continues today with books from a new generation of thinkers such as Adam Greenfield and Alexander Galloway, who offer insights into both the depredations and promise of digital.[90] None, however, critiques digital in the context of it being an analogue antithesis. This has never been the case, even when the book's subject cries out for it. For instance, in 1995 Nicholas Negroponte, founder of MIT Media Lab, could write *Being Digital*, a book about the wonderful possibilities of mixing 'bits with atoms'. He could state at the beginning of the book that 'the world as we experience it is a very analog place'[91] but here he speaks only of the world around us, a world apart from us, as did Aristotle in reference to the natural world and artefacts, and not as a world that we experience as part of ourselves. Negroponte's book offers the vision of our being digital but it does not consider at all the possibility of our 'being analogue'.[92] Like the others I have mentioned from these crucial

decades, and on until today, the nature of the analogue was hardly in anyone's frame of reference.[93]

Automation-Digital Redux

In a section of *Capital* titled 'Machinery and Modern Industry', Marx wrote that:

> The automaton, as capital, and because it is capital, is endowed, in the person of the capitalist, with intelligence and will; it is therefore animated by the longing to reduce to a minimum the resistance offered by that repellent yet elastic natural barrier, man.[94]

Here Marx makes it clear that the automation process, the *excising* of the human from the process of production altogether, is the Holy Grail of capitalism itself. Machine innovation, almost always geared toward more automaticity, obtains its momentum from this inner logic. I will build upon this argument and expand it back to Leibniz, which will then take us forward to digitality which, in its turn and through its effects, will pull us back again to the dawn of the relationship described in Gehlen's reflection on technique and the circle of action it generated. Digital automation, or digitality, *breaks with* this primary relationship with technology and nature. I will propose that digitality *extends further* the negative relationship with technology that capitalism historically imposed and which resulted in human alienation and reification. Digitality goes beyond even these. It cuts into the circle of action to undermine not only the human relationship with the technological artefact, the tool, but the connection with nature itself. Most problematic of all from the perspective of the project of socialist renewal that David Harvey ended his *Postmodernity* with, is that digitality constitutes an assault upon the constructed sense of the social self that historically has been motivated and equipped—through analogue relations and forces of production—to resist and oppose alienation and reification.[95]

In the late 1670s when Gottfried von Leibniz was developing his binary numbering system, he had an overriding humanist objective in mind. He wanted to create a universal system of human communication that would be flawless. His idea was that miscommunication through differences in language could be overcome through a symbolic language or script based upon mathematics. Not only that, faulty and illogical reasoning would be 'reduced to calculus'.[96] Like his contemporary and rival, Isaac Newton, Leibniz imagined he was working in the service of God, bringing light to the world through a deciphering of God's universe. What he achieved, however, was the setting of humanity upon the road to modern capitalism by impregnating technique with the logic of instrumental rationality. Another breakthrough came in 1804 with the invention of the Jacquard Loom by Joseph-Marie Jacquard. Basing his machine's logic on Leibniz's binary numbering system, Jacquard created what was in effect an

analogue machine that ran on digital software—software being the chain of cards with holes punched in them to a certain configuration that automated the processes of weaving and patterning the fibres to be woven. Designs could be thus exactly replicated time after time, thereby eliminating human error from the quality-control process. Productivity was massively increased through the speed of the process, which was no longer limited to the speed of the weaver, but to that of the machine, which was open-ended.

Charles Babbage, who conceived and built the first modern computer, the Analytical Engine, was captivated by Jacquard's invention when he saw it in the 1840s. He was particularly taken by the quality of the patterns in the fabric woven on the loom, which far surpassed the skill and quality of the manual weaver. He used to impress guests at his house with a remarkably fine 'portrait' of Jacquard that he owned, and which everyone assumed to be a high-quality engraving, but was in fact a woven piece of fabric.[97] The potential for computerised machines, and their application in factories especially, preoccupied Babbage greatly. And it was through the practical efforts of people like Babbage and his colleague John Herschel[98] that automation and capitalism would be combined and made generalisable as a default logic.[99] Once proof of concept was established as a working principle, as in the Jacquard Loom, the 'value' of automation needed no explaining to industrialists of the Victorian age of invention. The implementation of automation was held back only by lack of commercial opportunity, by provisional lack of technical feasibility in this or that context, and by worker resistance. However, as the capitalist ideal, automaticity had become the preferred design solution for machines of production wherever possible.

Automatic computing was more than just a technical solution. It was seen as a philosophical triumph, too. In the reasoning of Babbage and his contemporaries, inevitable error by human computers only compounds itself within a system. Error builds upon error to create a chaotic and ultimately unworkable process. However, to have a correct schedule of calculations to begin with, and to program these into a mechanical computer, meant that more and more complex problems could be solved. Accuracy and precision in calculation would build upon accuracy and precision, with each iteration of calculation revealing a higher (or deeper) level of 'truth' not just about mathematics, but about the science that was built upon mathematics—and in turn about the 'truth' of the world made apparent by science. Ada Lovelace, a foundational thinker in computing, and who worked with Babbage on the Analytical Engine, noted the power that computing would give to knowledge:

> The Analytical Engine has no pretensions whatever to originate anything. It can do whatever we know how to order it to perform. It can follow analysis; but it has no power of anticipating any analytical relations or truths. [However], in distributing and combining the truths and the formulas of analysis … the relations and the nature of many subjects

> in that science are necessarily thrown into new lights, and more profoundly investigated.[100]

These modern developers of computer science were uncovering not just 'truths' about the nature of the world in the abstract. They were in the business of creating actual machines—'engines of perfection' to set loose to work upon the world, engines that were error-free and automated to the highest degree possible.[101] The more automated, the more perfect. What this meant was that computing and capitalism could combine efficiency with truth and profit to promote a logic that would implicitly and often explicitly view humans (workers) as something residual to industrial processes; a regrettable obstacle, a problem that capitalism's practical needs and Victorian-age science's quest for uncovering God's truth would one day crack.

When Marx and Lukács theorised alienation and reification they had in mind *analogue machines*, which could only ever be partly automated. These were machines at which men and women stood or sat in factories or in offices in their daily work. From the perspective of capitalism, humans were a necessary but problematic component of the processes of production. For Marx, alienation was the subjective effect of estrangement emanating from the process. Writing over half a century later, Lukács saw that a complex capitalism demanded a reappraisal of Marx's basic concept. His reification is alienation across a wider sphere, across the orbit of effect that is the capitalist *economy* itself, and not simply production. In the 1920s, when Lukács wrote, capitalism and the actions that framed it had expanded greatly. A more complex and nuanced system had generated new forms of *mass culture* driven by modern patterns of production and consumption that grew through innovations such as mass communication and advertising. Reification reflected this more encompassing frame of social life. Moreover, it was a condition that permeated *consciousness* as commodification, as this core element of culture spread deeper and wider. For Lukács there was no objective limit to this unconstrained instrumentalisation of social life, and without a revolutionary transformation of consciousness to halt it, a 'reification of all human relations … without regard to human potentialities and abilities' would be the result.[102]

In this pre-digital relationship there was still a connection to Gehlen's circle of action, and through it to technique and to nature. This would accord with traditional Marxist analysis. Partially automated machines still needed direct human involvement and agency, to a greater or lesser degree. But this was a necessary ideological point as well. The human connection to technique and to nature meant human potential still existed in the relationship. This left open the possibility of *dereification* and thus potential *liberation* from the machines of capitalism. Andrew Feenberg, a contemporary interpreter of Marx and Lukács, reiterates this essential ideological component for Marxist theory:

> The circular relation between economic law and the technical manipulations which unconsciously generate the laws is fundamentally different

> from the case of nature in which laws are not effects of human action. Individuals can break out of the circle of reification through cooperative action to change the system. This dereifying practice is synonymous with proletarian revolution. It is not a technical manipulation of the economy in accordance with its laws but the overthrow of those laws through the transformation of their practical basis in human action.[103]

What is expressed here is a kind of negative circle of reification, one that could be put into reverse through proletarian revolution. For Feenberg, the cycle of economic law and technical manipulation just needs to be turned the other way, somehow, through control by workers. But note how nature and its laws are left to themselves and are accorded no inherent relationship in the constitution of technique. In view of a lack of a solid Marxist philosophy of nature, Feenberg therefore falls back upon the Aristotelian concept of a duality between humans and nature. In the age of digitality, such an analysis looks outdated; simplistic, even. Feenberg's book is titled *Technosystem* yet, despite its name, it takes hardly any cognisance of the dominant category of 'technical manipulation' today, which is digital; and he says nothing at all about automation. Technological change has been so profound that opinions such as these must be critically examined. Dispiriting also from such a consistent flame-keeper for a Marxist understanding of technology, is that any revolutionary potential within *digital* networks is subordinated in his book to ideological sniping at more detailed and engaged theorisations by, for example, Jodi Dean and Christian Fuchs.[104]

Considerations of the logic and effects of automation need upgrading. But we need to do this from the perspective of the human relation to technique and the transformed context that digital technology has created. Otherwise thoughts of liberation and revolution will be confined to an old analogue context whose time has already passed in terms of capitalism's twenty-first century imperatives. Digitality has taken automation and its logic of excommunication to waters that have yet to be properly explored and charted. Seen in this sense, 'automation' and 'capitalism' are no longer adequate theoretical or practical descriptors for this new ontological state. Digitality is generating new social relations. Automated digitality, moreover, constitutes what Gehlen termed a 'replacement technique' in that it not only gives capacity to humans where they had none (such as the creation of virtual time and space) but it replaces us too through an automation logic that is compelled by capitalism to infiltrate as much of life as possible. And so it is necessary to begin, almost *avant la lettre*, to understand these transformations in order to understand the new social, economic and political forms they reproduce.

To begin, then, is to state that the ancient circle of action is being broken by digitality. The connection to technology and nature that the analogue relationship preserved, however slight and tenuous in the high modern age, finds no primal bond or even trace wherever digitality imposes itself between human and machine. And so the effects are more serious than Marx or Lukács, or even

Adorno, Horkheimer and Marcuse could have envisaged in their pre-digital worlds. To break the circle of action is to be disconnected from both the facility with tools—that is to say, the analogue relation with technique and its liberatory potential—and from nature itself. Digital technique finds no analogue in nature nor in the simulated processes that we recognise in nature and in the functioning of our own bodies. Digitality has transformed the character of the estrangement that capitalism is able to impress upon the human relationship with technique. We saw that alienation, for Marx, was a localised phenomenon; and for Lukács the more generalised effect of commodification was expressed in his idea of reification. Digitality, however, affects the estrangement process in ways that would have been impossible under the analogue relationship. To expand on the point just made about the broken circle of action, we can see two main forms emerging: first is that humans are estranged from their ancient *relationship with tools* in that the computer-automation process in which we increasingly work finds no analogue in the natural world. With digital tools, it is impossible to grasp the link between the cause and effect actions that take place when producing and consuming. Second is that a disconnect from the *relationship with nature* is similarly affected by digitality in that the virtual space in which we increasingly produce and consume is a digitally-constructed one, an almost 'magical' space-time where our digital world is no longer human-sized, physical and graspable, but planet-sized, virtual and ungraspable. Moreover, the actual physical world of sky and soil and air now acts as backdrop for sedentary bodies engaged by screens; or else digitally-connected bodies impassively moving through smart homes or offices or cities; or bodies immersed in the Internet of Things, or in similarly distractive and absorbing digital environments that render the physical environment as at best a secondary aspect—or more often as just scenery.

The coming together of automation and capitalism has created a logic that is oriented toward a perfect world emptied of 'that repellent yet elastic natural barrier, man'[105]. In digitality the elastic has snapped, and the repellent creature is distanced as never before. But perfect automation (a kind of perpetual motion machine) as the font of unending surplus value, was always a chimera. Digital capitalism will always create new work for hands and minds. And commodities will always require a growing market of consumers. Digitality has not solved capitalism's human problem. The system continues to innovate and grow, but it has taken other directions in search of the self-same goal of profit. We will consider some of the main directions below. However, to finish off this theorisation of the transition from modernity to digitality, I will speak briefly about how philosophical anthropology, combined with a reflection on what I see to be a more illuminating perspective on the alienation from nature deriving from digitality, will allow us to move on to the later discussions better equipped to understand the ontological, political and economic challenges stemming from digitality.

Jacques Ellul was one of the few post-World War Two thinkers who, like Gehlen, perceived that 'technique'—employing the same German meaning—was

an anthropological question as much as a technical one. In his 1964 book, *The Technological Society*, originally published in French as *La Technique* a decade before, Ellul develops a startling thesis in what was then still very much an analogue world. A 'characterology' of emerging technique, he observes, is 'automation and its attendant exclusion of man.'[106] He gives descriptions of the 'astounding' growth in automation in the ten years since the end of the war—in factories, offices, airplanes, anti-aircraft defence and so on. Such growth is only logical, he notes, because from the perspective of technique, humans are an unwanted 'source of error and unpredictability'.[107] He saw that the logic of automation had inserted itself, and that this new relationship with technique would breed a 'mutation' in capitalism.[108] The cause of this mutation was automation itself. For Ellul, the digital logic of cybernetics (Ellul had read Wiener's *Cybernetics* and *The Human Use of Human Beings*) was to enable capitalism to break with the human world of analogue messiness and to begin to forge a new world of defined ends, the rationalisation of means, and the 'extensive application of mathematics' into every register of life.[109] His main point is made early in the book: 'Technique has become autonomous; it has fashioned an omnivorous world which obeys its own laws and which has renounced all tradition. Technique no longer rests on tradition…'.[110] This takes Wiener's concerns to the next logical step, to a world where capitalism is transformed, driven by different means towards its own unchanged ends. For Ellul, this is the 'monolithic world that is coming to be', where 'the buffer between man and nature' has been removed and where man is no longer able 'to find again the ancient [technological] milieu to which he was adapted for hundreds of thousands of years.'[111]

How do we stand, as analogue creatures, in relation to what John Johnston called this 'new *type* of machine, defined by a logical and functional rather than a material structure'?[112] The first step towards knowing is to know ourselves. However, Marx and Lukács' theories of alienation and reification have created a legacy problem for this. The concept of selfhood is the sticking point. Alienation and reification are predicated upon the distancing of the authentic self from the world through capitalism's logic of exploitation. In Marx and Lukács this inner self is something whole and essential. To be alienated is to have this inner self detached by capitalism and to be unable to identify with what one does within its orbit. Neither develop this ontological aspect very much, but it is implied in their respective and broadly complementary teleologies of revolution and liberation which posit, for a communist future, a *reunified* individual, where work and life are no longer broken down into component parts by capitalism. Contrastingly, for Adorno and Horkheimer, instrumentalisation brought only devastation to what they anyway saw as the 'synthetic unity' of selfhood:

> Even the ego, the synthetic unity of apperception, the agency which Kant calls the highest point, from which the whole of logic must be suspended, is really both the product and the condition of material existence. Individuals, in having to fend for themselves, develop the ego as

> the agency of reflective foresight and overview; over successive generations it expands and contracts with the individual's prospects of economic autonomy and productive ownership. Finally, it passes from the expropriated citizens to the totalitarian trust-masters, whose science has become the quintessence of the methods by which the subjugated mass society reproduces itself.[113]

A perspective that departs from these idealistic and pessimistic views on alienation and reification we find in Rahel Jaeggi's *Alienation*. The book is an essential adjunct to the intellectual armoury against digitality—even though it makes no reference to computers or technology. It is concerned only with a phenomenological rethinking of the nature of selfhood, and with the creation of a framework that interpreters can build upon. First of all, Jaeggi makes the necessary corrective to the worn-out modernist conception of the self as a 'thing' alienated from the world. Jaeggi calls this the 'container model' where 'the self exists somewhere inside, waiting to be expressed.'[114] She sees that in critical theory alienation has unfortunately become a superannuated issue, much like the concept of class, notwithstanding the fact that the condition of alienation (like class) is real.[115] If the problem of alienation is still alive under capitalism, then it is one that is particularly urgent in the age of digitality. Jaeggi articulates alienation's central features, manifesto-like, in the first (and last) sentences of page one of her book. She writes: '*Alienation is a relation of relationlessness*' and '*Alienation is a failure to apprehend, and a halting of, the movement of appropriation*'.[116]

Jaeggi wants to explore the *content* of alienation through a combination of everyday subjective experience and social philosophy concepts. Her central point, as just noted, is that we need to reject the idea of an essence that has been fragmented and which must be reunified. For Jaeggi, there is no self to be alienated, only a self to be formed in an unalienated context. She argues that there is no truth of the self beyond its manifestations. In other words, 'What we *are* must be expressed and *externalised* in order to acquire reality. There is no self apart from its realisation; it becomes determinate only as something realised'.[117] I will combine this open and flexible approach to the nature and possibilities of self and selfhood in the world of the everyday and in philosophy, with my more focused view of the self in relation to the circle of action and digitality. The ideas behind her use of the terms 'relation' and 'appropriation' are important to opening up the theory. A positive *relation* links the individual to the world to form a context wherein the self can begin to be created, to be expressed, externalised and realised. This is an ideal position of true freedom and of autonomy to the highest degree, where one 'can *appropriate* the life one is leading' and where one 'has oneself in one's command in what one does'.[118] Such a life is impossible under capitalism, in any of its manifestations. However, as a workable conceptual frame it allows us to see the damage that digitality does and see what, individually and collectively, is needed for the self to find

a position where human expression, externalisation and realisation are freed up sufficiently to begin to acquire an unalienated reality.

I interpret and adapt Jaeggi's theory of alienation in the following way: the 'relation of relationlessness' and the alienation that stems from it, corresponds to the broken relation with technique and nature that digitality has imposed. In other words, digitality, with automation as its major expression, has severed the circle of action. Digital-automation destroys the analogue relation to leave us in a new relationship with technology—a relation of relationlessness—that shuts us out from its logic, its operation, and the virtual and material worlds that it creates. A central point is that if digitality severs the analogue link and this relation, then automation *appropriates* the actions of working upon the world for itself. It abstracts the context of the relation into its own automaticity. Moreover, through the disconnect we are denied the means (through an even partial control over technique) that would halt or arrest the movement of appropriation by automation. Physical and mental labour is subsumed by the movement of appropriation and is articulated in the action of the speed-of-light digital pulses that connect and network the computer systems that permeate life as digitality. Disconnected from a logic that is programmed to discard us wherever possible, and from a magical logic we cannot fully comprehend, we become powerless to take back possession of what is in effect the appropriation of what *could be* another possible life, another possible world. Yet we are dependent upon digitality and its networks of appropriation—and are thereby compelled to live through the 'relation of relationlessness' dialectic that is digital alienation.

Jaeggi devotes much time to thinking about how such a life is bearable. We bear it, she theorises, by adopting roles: by taking on the parts which are largely allotted to us by an administering system and where, as Jaeggi writes, we act as the mere 'bearer of a function' in a process of encultured acquiescence.[119] This is what she terms self-alienation, where social roles—female, male, professional, vegan, labourer, writer, daughter, programmer, son etc.—are ones that either actively form us as persons in social life, or we adopt unconsciously. Either way, we act them out through a constricted existence where we never get the chance to express and externalise the self in any meaningful way. As Jaeggi puts it: 'What is alienating is not the roles per se but the impossibility of adequately articulating oneself *in them*.'[120] The 'impossibility' Jaeggi speaks of is the difficulty in appropriating roles for oneself when trapped within adopted or assigned social roles that serve to self-alienate. Jaeggi goes on to discuss a way out of this dilemma through what she calls 'living one's own life' through a form of 'self-determination'.[121] This element of her work need not detain us here. However, her idea of the 'relation of relationlessness' as the dynamic font of alienation, helps us to better understand the human relationship with digital-automation and networking as one of relationlessness, one that cuts us adrift from the logic and the actions of the new machines that give rise to our world.

We brought this on ourselves. And it has a name: neoliberalism. Neoliberalism was the ideological–political decision to leave research and development of

a 'new *type* of machine'—a new *category* of machine whose logic and powers we are only dimly aware of—to market forces and private companies. In doing this we effectively concede social power to the magic of computing. And in our general obeisance to the hidden hand of the market and the post-modern (mostly) men in Silicon Valley,[122] we adopt new (or different) roles as producers and consumers in the network society. This has changed us. Jaeggi quotes the 1960s sociologist, Helmuth Plessner, who pioneered role theory, and asserted that the bearer of a role appears to us as a 'pale, incomplete, strange, artificial man'.[123] Perhaps it was this general demeanour of alienated weakness that caused us—individually and collectively—to acquiesce so readily to the promises of the followers of Milton Friedman and Bill Gates and Steve Jobs in the late-modern phase of the 1970s. Their market-driven digitality now encompasses much of social life and creates and distributes digital-dependent roles and jobs for digital-dependent people. David Graeber terms these 'bullshit jobs'—the jobs that automation generates in services, administration, education, finance, marketing, distribution and so on.[124] These are the categories wherein millions upon millions of *recognisably* alienating jobs are created as a direct by-product of automation. And most of them await their own automation or obsolescence in some near-future time when the next digital productivity-enhancing solution comes along.

The 'relation of relationlessness' is perhaps a too Critical Theory-sounding descriptor for the successor to alienation or reification. It does, however, give some sense of a looming and all-encompassing void between the individual and the world; one where digitality gives no opportunity to form a basis upon which we can create a sense of self that is connected to the two most important elements of our social being: labour and nature. Being cut off from these through digital-automation means being cut off from the promise of emancipation that modernity offered through the potential that existed within the analogue relationship. What this new power of alienation suggests is that capitalism was vulnerable then, in predigital times, to processes it is no longer vulnerable to today: anti-alienatory processes such as organised labour and political parties that would genuinely represent them. This realisation brings us back to the question that the many on the left, such as Wolfgang Streeck, now ask in this historically unprecedented phase: 'how will capitalism end?'[125] He's not sure. No-one is. What many *do* feel sure about is that it won't come about the way we thought it might, or would, in the pre-digital age.[126] So how, then? In his book *How Will Capitalism End?* Streeck notes that information technology has 'destroyed the manual working class [and] is now attacking and about to destroy the middle class as well….'[127] This comes at the beginning of his book. But he never again mentions information technology, or automation, or the internet. Which is strange, given that he realises that computing has done so much damage to capitalism's central social structures. Social media gets a single paragraph on page 103. The term 'digital' appears nowhere at all. Notwithstanding the evisceration of capitalism's traditional component of class, Streeck still looks to

more traditional solutions. Having said that, Streeck's book is important. It is important because it constitutes an example of failure in Marxist analysis, one that follows in the path of David Harvey in its inability to look more deeply into the effects of information technology.

The logic of digitality can be looked at with too little focus—or with too much. And so at the other end of the continuum of critique there is Byung-Chul Han, a rising theorist of the neoliberalism-digitality connection. We have seen how, in the style of Paul Virilio, theorists such as Martin Burkhardt[128] prefer to work with a wide theoretical licence. The value of this is that their extravagances allow us to plot the whole field of a concept to its limits of tenability—and then work back from this to a position that can have more theoretical and practical purchase. However, in Han's theorisation of digitality, *In the Swarm*, he pushes digital theory too far towards the erasure of what it meant to be human in pre-digital times. Digitality, for Han, has not banished us from the circle of action and the possibilities that existed within analogue-generated technique. The logic has instead colonised us, taken us over, to make us into what he calls *homo digitalis*.[129] We are not alienated or experiencing 'relationlessness' in this telling, but instead we are incorporated into the swarm (the network) by the awesome power of computing. The technology relation for Han is like a singularity, where we are *as one* with the logic of digital and exist as part of it. The only freedom of movement we have is to oscillate between the swarm and what he terms an isolated 'private identity', which turns out to be little more than an IP address.[130] Digitality in this reading has not only destroyed the relationship to labour and nature, but also caused *homo faber* (the analogue human) to give way to *homo digitalis*, a 'man' we can recognise in Jaeggi's 'pale, incomplete, strange, artificial man',[131] one 'who is no longer a man of action'[132] and is therefore doomed to a kind of digital slavehood.

Han gives us nowhere to go. But, then, neither does Streeck. Each resides at the extreme end of a continuum regarding digital capitalism. In his unreconstructed new left Marxism, Streeck identifies the cause of the problem, but cannot see the cause as being in any way connected to the solution. Han, for his part, sees the cause, but instead of disregarding it as strangely epiphenomenal, like Streeck, he takes it to its nihilistic fringe, to what at the end of his short book he sees as a future of 'digital psychopolitics' where the possibilities afforded by biopolitics are also doomed as a new era of surveillance, programming and control unfolds.[133]

In this quite long section I have theorised the transition from an analogue to a digital world. I undertook to show that through the course of that transition we have missed something important—the world-transforming effects of digital logic upon our most ancient of relationships. Of primary importance in the age of digitality is not class, nor even capitalism, but digitality itself. Digitality has transformed our understanding of class and has transformed capitalism into something else, something that we find elusive and not fitting readily into the traditional moulds. I will look at what I see as some of

digitality's primary effects before going on to consider once more the politics of liberation, and whether socialism in any form is still available to us as a theoretical and practical means of resistance to digitality—and so as a means towards some form of freedom.

Notes

[1] Norbert Wiener (1948) *Cybernetics: Or Control and Communication in the Animal and the Machine*. New York: The Technology Press, p.11.
[2] Ibid., pp.138–139.
[3] James Ciment (2015) *Postwar America: An Encyclopedia of Social, Political, Cultural, and Economic History*. New York: Routledge, p.370.
[4] Wiener, *Cybernetics*, p.139.
[5] See Thomas Rid (2016) *Rise of the Machines: The Lost History of Cybernetics*. London: Scribe Publications, pp.8–43, 'Control and Communication at War'.
[6] Norbert Wiener (1954) *The Human Use of Human Beings*. New York: Houghton Mifflin, p.xxvii.
[7] R. W. Gerard (1953) 'Some of the Problems Concerning Digital Notions in the Central Nervous System', *Eighth Macy Conference* http://pcp.vub.ac.be/books/gerard.pdf, 171–202, pp.172 & 181.
[8] Ibid., p.172.
[9] Ibid., p.181.
[10] On the next page of transcript, however, von Neumann was clear about the analogue and digital dualism in respect of the science of physics: 'one must say that in almost all parts of physics the underlying reality is analogical … The digital procedure is usually a human artifact for the sake of description.'
[11] See Alan Turing (1950), 'Computing Machinery and Intelligence', *Mind*, 50, 433–460; see also Andrew Hodges (1983) *Alan Turing: The Enigma*. New York: Simon and Schuster, p.106.
[12] François-Xavier de Vaujany, and Nathalie Mitev (2017). 'The Post-Macy Paradox, Information Management and Organizing: Good Intentions and a Road to Hell?', *Culture & Organization*, 23(5), 379–407
[13] Fredric Jameson (1992) *Late Marxism*. London: Verso, p.102.
[14] François-Xavier de Vaujany, and Nathalie Mitev (2017a) 'The Electronic Brain that would Change the World: Back to the Historical Roots of Digital Transformation.', *The Conversation*. 17 October https://theconversation.com/the-electronic-brain-that-would-change-the-world-back-to-the-historical-roots-of-digital-transformation-85265
[15] Ibid.
[16] Wiener's attitude meant that, effectively, he cut himself out from the Defense Department research bonanza, and so was marginalised from the ongoing debates. He died in 1964. See *Dark Hero of the Information Age: In Search of*

Norbert Wiener, The Father of Cybernetics. Flo Conway and Jim Siegelman (2005) New York: Basic Books.

[17] Paul N. Edwards (1996) *The Closed World: Computers and the Politics of Discourse in Cold War America*. Cambridge, Mass.: The MIT Press. As Edwards puts it, the fact that Wiener was also interested in 'other types' of cybernetic machines, such as prosthetics, meant that military industrial work was never going to be his home. See p.67, n. 67.

[18] Ibid., p.69.

[19] Rid, *Rise of the Machines*. See especially Chapter Two 'Automation'.

[20] Edwards, *The Closed World*, pp.71–73.

[21] Mikael Hård and Andrew Jamison (2005) *Hubris and Hybridity: A Cultural History of Technology and Science*. London: Routledge.

[22] Dwight D. Eisenhower (1961) Military-Industrial Complex Speech: http://avalon.law.yale.edu/20th_century/eisenhower001.asp

[23] Edwards, *The Closed World*, p.xi.

[24] Ibid., p.70.

[25] As early as the 1960s, debates raged on the merits or otherwise of computerised production-line systems in automobile production. For a good summary, see Lars Westerlund (2000) *The Extended Arm of Man – A History of the Industrial Robot*. Stockholm: Informationsförlaget.

[26] In *The Human Use of Human Beings,* and elsewhere, Wiener continually discusses the 'analogies' between humans and computers, and their growing synthesis through computers and feedback loops. For example: 'While it is impossible to make any universal statements concerning life-imitating automata in a field which is growing as rapidly as that of automatisation, there are some general features of these machines as they actually exist that I should like to emphasize. One is that they are machines to perform some definite task or tasks, and therefore must possess effector organs (analogous to arms and legs in human beings) with which such tasks can be performed.' Wiener (1954), pp. 33–34. In other words, through interaction with computing the 'analogue' disappears to become a single entity; the human and machine become one, a combined analogue of each other—a human and machine analogue.

[27] The quote comes from Stephen Menn's 'Democritus, Aristotle and the Problemata' in Robert Mayhew (ed.) (2015) *The Aristotelian Problemata Physica.* Leiden: Brill, p.18. See also Joachim Schummer's 'Aristotle on Technology and Nature' in *Philosophia Naturalis*, 38 (2001), pp.105–120.

[28] Joachim Schummer, p.105.

[29] Marx, Karl (1976) *Capital*, Volume 1. New York: Penguin., p. 352.

[30] Georg Lukács (1990) *History and Class Consciousness*, p.xxiii.

[31] Ibid., p.87.

[32] Herbert Marcuse (1991) *One-Dimensional Man*. Boston: Beacon Press.

[33] Theodor Adorno and Max Horkheimer (2002). *The Dialectic of Enlightenment*. Stanford: Stanford University Press, p.23

[34] See Lukács's (1974) *The Theory of the Novel*. Cambridge, Mass.: The MIT Press, p.23.

[35] Adorno and Horkheimer, *The Dialectic of Enlightenment*, p.2

[36] A recent example, which gives no answer to its questioning title *How Will Capitalism End*?, is by Wolfgang Streeck (2016) London: Verso. In order to understand its crisis more deeply, others begin to shift away from older notions of capitalism and argue that to retain them is to suffer from 'poverty of nomenclature'. We need now, they say, to speak of and think of a 'capitalocene', suggesting that its demise is locked into the future of the environment. And it is here, in a victory in the battle against the depletion of nature, that capitalism will finally have run its destructive course. See Jason W. Moore (ed.) (2016). *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism*. Oakland, CA.: Kairos Books

[37] McKenzie Wark (2017) *General Intellects: Twenty-One Thinkers for the Twenty-First Century*. London: Verso, p.3.

[38] Arnold Gehlen (1980) *Man in the Age of Technology*. New York: Columbia University Press.

[39] It's interesting to note that in German, 'technik' implies a process or action that involves or incorporates the actor, the tool, and the physical world that is to be acted upon; whereas the English term 'technology' implies, as it does in Aristotle, a discrete artefact, something objective and distinct from the actor and nature.

[40] As Friedrich Rapp puts it, 'the strength of his [Gehlen's] investigation lies in the explanation of what mankind took to technology *in the first place*' (emphasis in original). See his (1981) *Analytical Philosophy of Technology*. London: D. Reidel Publishing Company, p.113.

[41] Gehlen *Man in the Age of Technology,* p.2

[42] Ibid., p.16.

[43] Ibid., p.18.

[44] Ibid., pp. xi & 2.

[45] Ibid., p.4.

[46] Species of Galapagos finches, for example, can change beak size and shape within a couple of generations, in response to naturally occurring changes in the environment that force adaptation in the birds. See, for example, B. Rosemary Grant and Peter R. Grant (1989) *Evolutionary Dynamics of a Natural Population: the Large Cactus Finch of the Galápagos.* Chicago: University of Chicago Press.

[47] Gehlen, *Man in the Age of Technology,* p.4.

[48] Ibid., p.ix.

[49] Ibid. In his ideas on technologies as 'extensions' Gehlen foreshadows Marshal McLuhan's much more influential theory of this in his 1964 book *Understanding Media*.

[50] As he describes it: '… technique, from its beginnings, operates from motives that possess the force of unconscious, vital drives. The constitutional

human features of the circle of action and of facilitation are the ultimate determinants of all technical development.' Gehlen, *Man in the Age of Technology,* p.19

[51] Ibid., p.14.

[52] Ibid., p.4

[53] Ibid., p.5

[54] Gehlen does not develop the point on the technologies that do (or do not) reference nature in a way that affects the issue of analogue and digital that I am developing. Instead, he concentrates on the materiality of the technology, whether organic nature (such as wood and leather) or inorganic nature as in plastics, or metals. This is ultimately a problem for Gehlen, as he argues that 'nonorganic nature is more knowable than organic nature' (p.6) and develops this into a bleakly dystopian scenario, where a superpositivism drives science toward hyper-rationalised futures (beginning with the development of machines)—and implies that there is not much we, armed with stunted philosophy and dwindling powers of reflection, and our still essential deficient survival instincts, can do about it. See Chapter 8 'Automatisms' in particular. This element of Gehlen's work has been much criticised, not least by the Frankfurt School, who were themselves pessimistic about technological development. Notwithstanding that there is some merit in Gehlen's argument, this particular direction does not fall within the scope of my arguments here.

[55] Silvia Estévez (2009) 'Is Nostalgia Becoming Digital?' *Social Identities*, 15(3), 393–410, p.401.

[56] Ibid., p.402.

[57] Ibid., pp.402–403. (emphasis mine)

[58] R. W. Gerard (1953) 'Some of the Problems Concerning Digital Notions in the Central Nervous System', *Eighth Macy Conference* http://pcp.vub.ac.be/books/gerard.pdf, 171–202, pp.172

[59] Gehlen, *Man in the Age of Technology,* p.4.

[60] See Jerry Muller (1997) *Conservatism*. Princeton, NJ: Princeton University Press, pp.401–404. For a discussion on the intellectual lineage of Gehlen's conservatism, see Thomas Molnar's 'A Posthumous Conversation with Arnold Gehlen', *The World and I*, November, 1989. Online at: http://www.amerika.org/texts/a-posthumous-conversation-with-arnold-gehlen-thomas-molnar/

[61] See Peter Bergen's 'Introduction' in Gehlen, *Man in the Age of Technology,* p.xvi.

[62] Ibid., p.13.

[63] Arnold Gehlen (1988) *Man, his Nature and Place in the World*. New York: Columbia University Press, p.165.

[64] For an introduction see Jean Gimpel (1992) *The Medieval Machine: The Industrial Revolution of the Middle Ages.* London: Pimlico.

[65] Francis Bacon (2000) *The New Organon*, Lisa Jardine & Michael Silverthorne (eds). Cambridge: Cambridge University Press , pp.28–29.
[66] See John Ashworth's highly insightful 'Memory, Efficiency and Symbolic Analysis: Charles Babbage, John Herschel, and the Industrial Mind'. *Isis*, 87(4), 629–53
[67] See my note 39.
[68] Adorno and Horkheimer, *The Dialectic of Enlightenment*, p.23. See note 54 on Gehlen's ideas on 'organic' and 'nonorganic' technology.
[69] Martin Burkhardt (2018) *All or Nothing: A Digital Apocalypse*. Cambridge, Mass.: The MIT Press, p.3.
[70] Ibid., p.3.
[71] Gehlen, *Man in the Age of Technology,* p.12.
[72] Ibid, p.12.
[73] Ibid., p.14.
[74] Arthur C. Clarke (1973) *Profiles of the Future*. New York: Harper and Row, p.21.
[75] Adorno and Horkheimer, *The Dialectic of Enlightenment*, p.7.
[76] See: https://www.youtube.com/watch?v=O5ZSXPMlumc
[77] Burkhardt, *All or Nothing: A Digital Apocalypse*, p.12.
[78] Ibid., p.48.
[79] During the early part of the 1980s, the tide turned in terms of the developmental arc of computer development and spread. By that time, more of the investment dollar in the US went into computer and related high-technology equipment than went into traditional labour-intensive machinery. See Joyce Kolko's (1988) *Restructuring the World Economy*. New York: Pantheon, p.66.
[80] There is no space for me to list and describe the relatively small number of books and authors who were engaged in a critical appreciation of the rise of computing that made possible the rise of globalisation. For an in-depth look, see my book (2012) *Age of Distraction*. New York: Transaction Publications.
[81] Neil Postman (1992) *Technopoly: The Surrender of Culture to Technology*. New York: Vintage.
[82] Ibid., p.58
[83] Theodore Roszak (1986) *The Cult of Information*. New York: Pantheon.
[84] Mark Poster (1995) *The Second Media Age*. Cambridge: Polity.
[85] Ibid., p.195.
[86] William Gibson (1984) *Neuromancer*. London: Gollancz; Neal Stephenson (1992) *Snow Crash*. New York: Bantam Books.
[87] Margaret Wertheim (1999) *The Pearly Gates of Cyberspace*: *A History of Space from Dante to the Internet*. New York: Doubleday
[88] Ibid., p.308.
[89] Michael Hardt (2002) 'From Porto Alegre: Today's Bandung?' *New Left Review*, 14, 112–118, p112.

[90] Manuel Castells (1997) *The Information Society*. Oxford: Blackwell; Kevin Robins and Frank Webster (1999) *Times of the Technoculture: From the Information Society to the Virtual Life*. London: Routledge; Lev Manovich (2001) *The Language of New Media*. Cambridge, Mass.: MIT Press; Cass Sunstein (2001) *Republic.com*. Princeton: Princeton University Press; Adam Greenfield (2016) *Radical Technologies: The Design of Everyday Life*. New York: Verso; Alexander Galloway (2012) *The Interface Effect*. Polity Books.

[91] Nicholas Negroponte (1995) *Being Digital*. Cambridge, Mass.: MIT Press, p.15.

[92] In 1998 Carol Wilder wrote a wonderful chapter titled 'Being Analog'. I am indebted to her for introducing me to the Analog-Digital discussions at the Macy Conferences. It is a beautifully subjective piece in which, like Silvia Estevez's essay, and the novel by Ellen Ullman that she quotes from, Wilder takes almost for granted that we are analogue, the surprise being that it is necessary to make the argument. Thinking about what has been lost in the rise to domination of digitality, Wilder considers our relationship to nature and the ecology as being of primary importance. She uses the work of ecologist Bill McKibben to argue why it is that 'lost information' is a strange paradox in our digital world of info-glut. For her the 'lost information' is the human, the fuzzy, the grey areas, the tacit, and that which is the preserve of the workings of the analogue world. She ends the chapter by stating: 'Being analog is only a start, and only a part of the story, but taken seriously, it may provide one more aperture to "missing information" in an age that so clearly calls for the collective wisdom an ecological vision may hold.' See Carol Wilder (1998) 'Being Analog' in *The Postmodern Presence*, Arthur Berger (ed). London: Sage.

[93] In the previous chapter I used Ngram to chart the decline of the term postmodernism from 1990 to 2008. I used it again to see the fate of the words 'analog' and 'digital' over the same period ('analogue' also included). Notwithstanding the program's limitations, the results were in line with my expectations. The term 'digital' has been on an upward curve since 1990, reaching a peak in 2004, dipping slightly after that to remain constant. 'Analog' has been on a downward path since the beginning, with only a brief period of gain, plateauing in 2000, and then continuing down again.

[94] Karl Marx (1976) *Capital Volume 1*. Harmondsworth: Penguin, p.527.

[95] *The Condition of Postmodernity,* p.359.

[96] See E. T. Bell (1953) *Men of Mathematics*. Harmondsworth: Penguin, p.123.

[97] See James Essinger's (2007) *Jacquard's Web: How a Hand-Loom Led to the Birth of the Information Age*. Oxford: Oxford University Press, p.4.

[98] John Herschel (1792–1871) polymath, supporter and friend of Charles Babbage. See Doron Swade (2001) *The Cogwheel Brain: Charles Babbage and the Quest to Build the First Computer*. London: Abacus.

[99] See John Ashworth, (1996) 'Memory, Efficiency and Symbolic Analysis: Charles Babbage, John Herschel, and the Industrial Mind', *Isis*, 87(4).

[100] Cited in Bruce Collier and James MacLachlan (1998) *Charles Babbage and the Engines of Perfection*. Oxford: Oxford University Press, p.70.
[101] Ibid.
[102] Lukács, *History and Class Consciousness,* p.6.
[103] Andrew Feenberg (2017) *Technosystem: The Social Life of Reason*. Cambridge, MA.: Harvard University Press, pp.149–150.
[104] Ibid., see pp.89–95.
[105] Marx, Karl (1972) *Capital*, Vol. 1, in *The Marx-Engels Reader*, ed. Robert C. Tucker. New York: Norton., p.405.
[106] Jacques Ellul (1964*) The Technological Society*. New York: Vintage, p.135.
[107] Ibid., p.136.
[108] Ibid., p.153.
[109] Ibid., p.342.
[110] Ibid., p.14.
[111] Ibid., p.429.
[112] John Johnston (2010) *The Allure of Machinic Life*. Cambridge, Mass.: MIT Press, p.70. (emphasis in original)
[113] Adorno and Horkheimer, *The Dialectic of Enlightenment*, p.68.
[114] Rahel Jaeggi (2014) *Alienation*. New York: Columbia University Press, p.46
[115] Ibid., p.46. Axel Honneth, in his 'Foreword' to the book, laments the disappearance of the concept of alienation, and warns that 'Nothing signals more clearly the danger that Critical Theory might become obsolete that the death of what was once its fundamental concept'., p. vii.
[116] Ibid., p.1. (my italics)
[117] Ibid., p.46.
[118] Ibid., p.48. See also, pp.36–37.
[119] Ibid., p.68.
[120] Ibid., p. 68. (emphasis in original)
[121] See Chapter 10: 'Living one's own life: self-determination, self-realisation, and authenticity'
[122] See Nathan Cohen's (2018) *The Know-it-Alls: The Rise of Silicon Valley as a Political Powerhouse and Social Wrecking Ball*. New York: The New Press.
[123] Jaeggi, *Alienation,* p.70.
[124] David Graeber (2018) *Bullshit Jobs: A Theory*. New York: Simon and Schuster.
[125] Streeck, *How Will Capitalism End*?, n.34
[126] The cultural theorist Mark Fisher sees capitalism, neoliberal capitalism, as 'zombie capitalism', an 'undead system which people can't see beyond'. See his 'We need a post-capitalist vision' in (2018) *K-Punk*. New York: Repeater Books., p.672.
[127] Ibid., p.9
[128] Martin Burkhardt, (2018) *All or Nothing: A Digital Apocalypse*, Cambridge, MA.: The MIT Press. See page p.3.
[129] Byung-Chul Han (2017) *In the Swarm: Digital Prospects*. Cambridge, Mass.: The MIT Press.

[130] Ibid., p.11.
[131] Jaeggi, *Alienation*, pp.68–98.
[132] Han, *In the Swarm*, p.32.
[133] Ibid., p.80.

CHAPTER 4

The Condition of Digitality: A New Perspective on Time and Space

> Our 'direct' experience of 'real' reality is already structured…
>
> Slavoj Žižek, 2017.[1]

Drawing deeply and directly from Marx as he always does, David Harvey, in *The Limits to Capital*, says of the connection between capital accumulation and technological change that:

> Capitalism is highly dynamic and invariably expansionary. Powered by the engine of accumulation for accumulation's sake and fueled by the exploitation of labour power, it constitutes a permanently revolutionary force which perpetually reshapes the world we live in.[2]

He goes on to argue that this 'permanently revolutionary force' has lost none of its verve and continues to drive and shape capitalism today as much as it did in Marx's time. However, Harvey's innovation within Marxism is the emphasis upon the role and function of physical space in the processes of accumulation. Physical space is the container of the process of accumulation. And within such space the process evolves as a relation based upon certain criteria such as the *material* forces of machinery, plant, offices, labour, natural resources and so on; upon forces such as these that are *contiguous* insofar as accumulation must always seek to overcome the proximal barriers that it will inevitably encounter—material, physical, technological, governmental (such as policies, tariffs, etc.) 'which can check, and on occasion disrupt the overall circulation of capital'[3]; and upon *technological change*—to replace labour as much as possible and to increase the rate of surplus value extraction, both of which are essential to successful accumulation.[4]

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The 'transition' that Harvey theorises in *The Condition of Postmodernity* is the transition to a new and necessary (for capital) form of *flexibility* in the political and economic context surrounding the accumulation process. The crisis of overaccumulation was central to his analysis of the political economy of 1970s capitalism. This was overcome, at least temporarily, through implementation of neoliberal policies that promoted globalisation and thus gave accumulation a new lease of life through a growing ideologically-sanctioned capacity to expand deeper into culture and society, and wider into new physical spaces, into new markets and zones of production, to overcome any barriers to the free-flow of capital wherever they may be. The point was emphasised by Noel Castree, who writes in his essay on Harvey that 'For [Harvey] capital accumulation is a seamless process: a flow that is realised in and through diverse physical and symbolic things, such as living labourers, factories, architecture and communication systems.'[5] As I said, space and the flow within space is an important insight in Harvey's analysis of accumulation, and I'll come to it again shortly. Before that I will highlight once more the consequences of his underplaying the question of technology. On one hand he agrees with Marx that technological change is a vital element in the accumulation process in that it grows the rate of labour exploitation and hence profit. On the other hand he departs from Marx's view that the inevitable consequences of technological change are necessarily the suppression of wage levels, the creation of a reserve army of labour, and the never-ending immiseration of workers through unemployment or starvation wages—a logic that would prepare the ground for a socialist revolution. In Harvey's spatialised account of accumulation, the 'spatial fix'[6] or 'accumulation through expanded reproduction', shifts Marx's inner contradiction to a wider sphere, with geographic space supplying the historical time for capitalism to survive for much longer than Marx could have envisaged. The crisis of the 1970s was for Harvey the political economy context for the largest 'spatial fix' in the history of capitalism. It was to be a transformation that would inaugurate the present phase of globalisation, and which would bring capitalism and its dynamic of accumulation to every corner of the Earth for the first time. The corollary of this was that the post-Fordist 'spatial fix' might be the last one.

A Mutation in Accumulation: Generalised Commodification through Digitalised Networks

The phenomenon of digitality raises serious questions about Harvey's political economy of space. His downgrading of the technological, and his seeming lack of interest in the possible consequences of digital networks, undermine both the spatial theory of capitalism in *The Limits to Capital* and the cultural and political articulation of this theory in *The Condition of Postmodernity*. The 'transition' he describes in his latter book was not *fundamentally* an ongoing historical materialist shift to a different *economic and political context* in order

to solve the overaccumulation crisis. It was, rather, the evolution of a new *technological and ideological* context, neoliberalism, that triggered a *mutation of the accumulation process itself*.

To make sense of this we need to think back to the analogue-digital binary that was discussed earlier. There we can see that accumulation in the classical sense was a completely analogue process. When Marx wrote about accumulation as being the most important requirement of capitalism, he wrote about a process that emerged and functioned according to the logic of 'technique' that existed at that time. Moreover, this was expressed through the Gehlenic 'circle of action'—the interaction of humans, technology, and nature. For thousands of years this interaction was elementary and localised. In the Britain that Marx studied, the interaction had become industrialised and generalised but the interaction itself was still analogue. Industrial technologies that corresponded to nature and the human body continued to scale the world to human dimensions. It follows that the processes of capital accumulation were roughly contiguous; that is to say, people could recognise and understand their accumulation-serving activities as crossing time and space in a visible way, and they could therefore recognise and understand the flow and the movement between cause and effect within its human-scaled contiguity. The connective tissue of this accumulation was held in place through the characteristics of technique. In the main, these corresponded to two of Gehlen's categories: of 'strengthening', in that they amplified human capacities, and of 'facilitation', in that they relieved the burden on human organs. In Victorian Britain, the 'seamless process' that Castree describes preserves its discernibly analogue quality in the accumulation process.[7] However, this sense of contiguity, and of the human scale of the accumulation logic, began to be stretched and strained with the introduction of new techniques of 'replacement', of techniques that acted in space-time capacities that humans do not possess. The immanent 'potential' of technology when subjected to the narrow imperatives of accumulation, meant that 'replacement' innovations such as the telegraph were oriented in purpose to rationalising and ordering the non-human-scale physical space in which they operated. It was the telegraph—the first of the rapid and long-distance communication technologies—which acted upon the accumulation process in a new and revolutionary way that was not fully understood at the time. However, with perhaps unconscious prescience, *The Communist Manifesto* of 1848 noted the de-localising capacity of accumulation through the 'electric telegraph'.[8] The 'magic' of the telegraph, whose vital electronic code Marx described later as something 'not made up of raw material' and therefore a strange but effective 'auxiliary'[9] to accumulation, actually served to supercharge the process of accumulation by taking it to another spatial and temporal level where, as the *Manifesto* famously put it:

> All old-established national industries have been destroyed or are daily being destroyed. They are dislodged by new industries … that no longer

> work up indigenous raw material, but raw material drawn from the remotest zones; industries whose products are consumed, not only at home, but in every quarter of the globe. In place of the old wants, satisfied by the production of the country, we find new wants, requiring for their satisfaction the products of distant lands and climes. In place of the old local and national seclusion and self-sufficiency, we have intercourse in every direction, universal inter-dependence of nations. And as in material, so also in intellectual production.[10]

This passage is cited often as a vivid presage of the globalisation of our own time. Marx and Engels may not have known quite what to make of this 'auxiliary' to accumulation, but they did see that communication technologies would be important, and that the human-scaled world of early industrial capitalism was being transcended. Marx in particular, in his *Grundrisse* of 1857, intuited that an invisible and increasingly rapid connective web of communication would become the central organising force for a capitalism destined to globalise its drive to accumulate in space that is annihilated by time.[11] It took the extraordinary potential of computing as a communication and rationalising technology to make the definitive leap that would transform analogue accumulation into digital accumulation. In so doing it would become a different form of accumulation, a mutation of capitalism's DNA, a capitalism now increasingly dominated by another technological category.

How are we to understand this mutation? Digital capitalism is able to, as Dan Schiller phrased it, 'directly generalise'[12] the scope of its activities to almost every facet of life. This is the headline effect of capitalism's capacity for accumulation of a radically new order. Underlying this, however, it is possible to see that capitalism's digital logic allows it to *be present* everywhere in the world *at the same time*. It is able to be 'on' (actual) or 'off' (atmospheric) wherever and whenever there is a networked connection. And as digitality becomes more extensive, then so too does accumulation act as an actual or atmospheric force. This idea is not entirely new. However, some media theorists, of whom Dwayne Winseck is representative, strike a common note by getting the analysis of digital capitalism only half right. Winseck is right when he observes that '*direct commodification* is playing a greater role because digital media make it easier, more efficient, and effective than ever to monitor, measure, and monetize'.[13] Direct commodification is the constant presence of digitality in our lives. Direct commodification becomes physically part of our person when carrying a networkable device, and direct commodification is present around us in the ether through networks of invisible data streams that, along with the connected device, form a condition of digital *superveillance,*[14] of an overweening control over the human as both subject and object of accumulation. This is digitality as omnipresent. It directly commodifies our thoughts and actions, and we do not even have to be conscious of the fact. And this is only the beginning.[15]

However, Winseck misses the full import of digitality and actually weakens his analysis of it when he continues, quoting Vincent Mosco for support: 'Thus, far from constituting a rupture with the past, the "central tendency" of digitalisation "is to deepen and expand the capitalist market system"'.[16]

The deepening and the expansion of capitalism are certainly true. But it's not simply that digitalisation is powerfully enhancing the same old logic, acting only as a trusty 'auxiliary', and that all the Victorian pieces of that logic are still in place. Marx's 'auxiliary' of space shrinking and time accelerating communication technology has become the *central* dynamic and the leading force within capitalism. And anyway, 'rupture' does not quite capture it. Capitalism, and by extension, accumulation, have undergone a mutation in response to their changed technological environment. Like the mutated gene in biology, capitalism begins to affect its environment once it establishes itself in that environment. Analogue accumulation became digital accumulation with the introduction and establishment of digitality as the environment within which accumulation takes place. The subtitle of this chapter is 'a new perspective on time and space'. It is meant to signal the importance of time and space for the processes of accumulation. With the digitalisation of time and space, capitalism has broken free from the technological shackles of analogue technique. The mutation has transformed its environment by making the old one increasingly redundant. There was nothing planned and conscious about this; it is the historical potential of technology coupled with capital accumulation following (and *being able* to follow) the logic of its own imperatives. Breaking free had two major effects: first is that it has alienated deeply the labour component of capitalist accumulation, forcing upon billions of us the 'relation of relationlessness' that I described previously through Rahel Jaeggi's work. This now constitutes the human relationship with post-analogue technology. Second is the transformation of the accumulation process itself. Through digitality, capital accumulation has garnered to itself hitherto non-existent capacities for labour extraction and value creation. This is achieved though the function of information as the central creator of value. Information in the form of code and software, and all that these make possible, from tracking to apps, and from 'productivity' tools to entertainment, are now networked and pervasive and come pre-loaded with the potential, atmospheric or actual, for direct commodification.

Direct commodification through digitality gives the processes of labour and value-creation a new and infinitely expandable dimension. Through digitality, accumulation becomes a pervasive process, it presupposes almost everything we do, at least in potential, a potential that is always either atmospheric or active. At one extreme, to have an active digital communicator in your pocket is to place yourself, consciously or not, into the zone of labour and value-creation/extraction for capital. Whether in your pocket or in your hand, the digital device acts as your tether to the network through increasingly complex and automatic protocols whose functions and opt-in-or-out controls lie buried deep inside the

software access terms and conditions legalese that barely anyone reads or understands. We check the box. And we activate, among a growing number of functions, GPS-enabled tracking which, as Michael Curry has written, 'has created a system of great power, and of great utility for the storage and analysis of information and for extended surveillance on individuals and groups'.[17] Labour power and value are expended and extracted merely by possessing the device. Possession, and the contiguity to the network that it presupposes, facilitate the surreptitious collection of data not only for storage, analysis and surveillance purposes, but as data that is immediately convertible into exchange-value, atmospheric or active, as soon as it is registered to the servers of the collecting agency. Slightly more salient are the push–pull capacities of the digital device. Push code is where distant servers ping your digital communicator with notifications or updates of every sort, and pull code is where your phone will ask servers for new information or content. The constant push and pull of digital signals keep you attached to the network, and the process generates data that can be aggregated, analysed and parcelled-up in milliseconds for auction to advertisers eager to obtain user profiles. At the middle of the continuum of digital accumulation is a more active–cognitive realm where the user spends time in conscious interaction with the web or network in work, study, leisure, and so on. Here work can be formally commodified in the routine activity of what used to be termed, in the phrase coined by Daniel Bell in his 1962 *The End of Ideology*, the 'information worker', the service worker whose cognitive skills acquired as practical–vocational knowledge in the ongoing expansion in technical and higher education are subsumed by digitality into the network as directly commodifiable activity.[18] Labour and value-creation are further extracted through the very pervasiveness of digitality itself, in a context where work, entertainment and recreation blend increasingly seamlessly in the lives of millions if not billions of people. Almost every network activity, consciously or unconsciously, is now an actual or atmospheric source of direct commodification.[19] And in the context of digitality, where accumulation remains the 'Moses and the prophets'[20] of capital, the drive to find every opportunity, however remote or presently unthinkable, to monetise this human vulnerability, gives constant expression to the alienation inherent in the 'relation of relationlessness'.

We see this drive most clearly in both its most sophisticated and yet crudest articulations: in the so-called 'labour platforms' that constitute the technological and physical labour articulations of the gig economy. The Data and Society Institute published a report, based upon ethnographic research in the US in 2018, that is one of the few that goes beyond journalistic and corporate narratives on the gig economy, to undo some assumptions that cast labour platforms as a normative phenomenon.[21] Increasingly sophisticated phone-based apps are at the heart of what the authors term 'algorithmic management'—or automated exploitation.[22] The sophistication of the labour platforms is shown in the fact that they are able to colonise, digitalise and monetise labour in both old and new ways. The authors write that:

> We outline two distinct types of labor platforms: on-demand and marketplace platforms. These two types of platforms share features such as measuring worker performance through ratings and reviews, penalizing workers through deactivation, and channeling communication through in-app systems. However, they intervene differently in the relationships between workers and clients. While on-demand platforms (like Uber) indirectly manage the entire labor process – from hiring, dispatching to clients, payment, and surveillance of services provided – marketplace platforms (like Care.com) primarily target the hiring process through sorting, ranking, and rendering visible large pools of workers. Several platforms (like TaskRabbit) combine elements of both types. On-demand and marketplace platforms shift risks and rewards for workers in different ways. Marketplace platforms incentivize workers to invest heavily in self-branding and disadvantage workers without competitive new media skills; meanwhile, on-demand platforms create challenges for workers by offloading inefficiencies and hidden costs directly onto workers.

Digitality and its innovative capacity to restructure and network labour relations through on-demand and marketplace platforms, bring alienation and exploitation to a new plane of articulation and constitute the leading edge of direct and automated capitalist accumulation. The *ideology* and the *practice* of time and space within neoliberal digitality play the central role in this emergent articulation. The classical contiguity of material processes of accumulation within economies and societies is increasingly attenuated by digital networks of communication. The leading edge of digital accumulation practices does not function such that analogue-based recognition of cause and effect in time and space is evident and understood as in capitalist modernity. The Uber driver and TaskRabbit cleaner do not face a supervisor, or converse in person (therefore discovering potential solidarity) with a fellow-worker; neither are they based in any physical infrastructure that is owned or rented by the company for which they work. Of course, the production, distribution and consumption of physical things are still a major element of digital capitalism. And so an Amazon 'fulfilment centre', for example, exists in time and space as a physical-material entity, much like warehouses have always done. However, Amazon calls these centres 'specialized infrastructure' with a specific, network-dependent function. Amazon's fulfilment centres may exist in physical time–space, but they—and their contractors, suppliers and customers—function in digital time–space. Machine-learning picker robots, cloud computing databases, network logistic analytics, just-in-time delivery and despatch run 24/7 alongside increasingly fine-grained surveillance and value-extraction techniques applied to third-party supplied and minimum-waged labour.[23]

This is the growing reality of work today. This and more is the future of work. Unless this process of neoliberal digitality is stopped or thwarted by organised

labour or by organised social-democratic or socialist political action, the logic of digitality inside labour platforms will continue to colonise older labour practices and institutions where possible, and will inaugurate newer and more 'innovative' forms of accumulation as economies continue to change and reflect competition. In short, whereas analogue accumulation engendered resistance through the dialectic of materiality, the logic of digital accumulation nullifies this immanent process and therefore the antithesis is unable to emerge in the old ways.

The Evolution of the Mutation

If the accumulation process under capitalism has undergone a mutation due to the effects of digitality, it follows that capitalism more broadly has too—exhibiting effects that reach beyond the more constrained logic of its earlier form. Marx, for example, saw capitalism as more than a narrow economic process. It is often forgotten that he saw it as a *social relation*; one that encompasses, potentially, all forms of life in societies where capitalism holds sway. A contemporary advocate of a wide-as-possible theoretic lens in respect of the analysis of the condition of capitalism is Nancy Fraser. She argues that any analysis of capitalism must incorporate 'the insights of feminist thought, cultural theory and poststructuralism, postcolonial thought, and ecology.'[24] To this I would add digital media and digital technology, and so I will integrate and develop these themes in the remainder of this part of the book.[25]

Jacques Mallet du Pan was a journalist, and also a 'notorious royalist' according to Karl Marx,[26] who was on the side of Louis XVI in the French Revolution. Du Pan would have had an investment in the revolution's outcome, and so his views on the subject of revolution might be predictable. Accordingly, he's largely forgotten except for one aphorism that survives, and which Marx would have done well to consider when writing about him: 'The revolution devours its children', du Pan is recorded as saying. It's worth reflecting on this when thinking of the revolution in digital technology that has gripped the functioning of capitalism. Through digitality, capitalism damages its own conditions of possibility. It devours its children, to use du Pan's more eye-catching phrase. To be clear: this is not the gravedigging antithesis in which Marx had so much misplaced scientific confidence. Perhaps closer to what I want to suggest comes in the intriguing formulation of Wolfgang Streeck, whereby 'capitalism vanish[es] on its own, collapsing from its internal contradictions, and not least as a result of having vanquished its enemies'.[27] What follows the disappearance of capitalism after its 'final crisis, now underway', in Streeck's conception, is a 'lasting interregnum … a period of prolonged social entropy, or disorder'.[28] The devouring in this case would be the undermining of capitalist society's institutions, producing a '*de-institutionalized* or *under-institutionalized* society, one in which expectations can be stabilized only for a short time by local improvisation, and

which for this very reason is essentially ungovernable.'[29] Quite what this ungovernability would look like (compared with today) is not stated, but things do not sound in any way appealing or hospitable in a near-future society that Streeck envisions to be made up of:

> collectively incapacitated *individualized individuals,* as they struggle to protect themselves from looming accidents and structural pressures on their social and economic status. Undergoverned and undermanaged, the social world of the post-capitalist interregnum, in the wake of neoliberal capitalism having cleared away states, governments, borders, trade unions and other moderating forces, can at any time be hit by disaster; […] With individuals deprived of collective defences and left to their own devices, what remains of a social order hinges on the motivation of individuals to cooperate with other individuals on an ad hoc basis, driven by fear and greed and by elementary interests in individual survival. Society having lost the ability to provide its members with effective protection and proven templates for social action and social existence, individuals have only themselves to rely on while social order depends on the weakest possible mode of social integration*, Zweckrationalität*.[30]

This emerging human trauma is pitched at a high level of abstraction and so is short on concrete specifics. This is understandable. And to be fair to Streeck, the world around us does contain foreshadowings of such a dystopia today. In other words, this *does* sound like a plausible extrapolation of the world at present—a world where the dominance of an analogue historical materialist dialectic no longer applies.[31] But Streeck's call for the revival of a 'public mission of sociology', beginning in the university, reads like traditional critical political economy; a twentieth-century analysis for twenty-first century social, cultural and economic malaise. Things have become so bad in Streeck's depiction of the final crisis, that it is difficult to see what, if anything at all, could rescue the situation for democratic or socialist forces. We see further evidence of this narrowness of scope in Streeck's classical political economy in, for example, the lack of an environmental perspective. The inclusion of such a perspective is already mainstream elsewhere, and it is at the centre of an important collection on capitalism's crises in Jason W. Moore's *Anthropocene or Capitalocene*?[32] Here, too, however, theorisation or identification of a politics of resistance, or what would in 2019 manifest spontaneously—through social media—as the global 'extinction rebellion', is downplayed in favour of what Moore terms 'an evolving conversation'.[33]

I will suggest another scenario for the future of the mutation of capitalism. It forms a tangent to Streeck's analysis in some respects, but it suggests an approach that identifies a different political priority to his 'public mission of sociology'. There is little doubt that capitalism undermines the very conditions of its own possibility. Financialisation, environmental sustainability, and David

Harvey's 'limits' to the physical space within which capital can be profitably deployed, all constitute serious and ongoing risks for capitalism's viability. Whilst these risks may be 'managed' sufficiently to keep the system in a state of life-support for some unknown time into the future, there are deeper aspects of the 'devouring' logic that signal risk not only to the relative political 'stability' and 'order' that successful accumulation strategies need, but also to the foundations for future social democratic or socialist alternatives to capitalism. Digitality undermines two of capitalism's deepest and most important 'moderating forces': modernity and the Enlightenment. However, these are much more than stabilising ballast for capitalism; they have been the indispensable supports upon which a functioning capitalism has rested in Europe and North America since the eighteenth century. Let us look at them in their turn.

Modernity, as Jean-François Lyotard wrote in *The Postmodern Condition*, was the grandest grand narrative of them all. It was a discourse that contained many of the sub-narratives that made it possible for capitalism to function through other discourses such as rationality and science. Moreover, it acted as a check upon its intrinsically destructive logic through further modern discourses such as democracy and literacy. Enlightenment thought overlaps with modernity's narratives and in some important senses is synonymous with them. But it was less connected to capitalism in a practical, enabling sense, and evolved with capitalism and modernity to function as the metaphysical point in the triad. Like modernity, Enlightenment thought was formulated and enacted by numberless thinkers over many generations. These might agree or not with this or that aspect of Enlightenment's supposed character. Immanuel Kant, for instance, described a quality of Enlightenment as 'Having the courage to use your own understanding!'[34] Whereas the Frankfurt School saw *Zweckrationalität* as Enlightenment's chief articulation, something that increased in its intensity as technology increased in its complexity.

Implicit or explicit in many accounts is that modernity and Enlightenment run in parallel with capitalism, existing in essentially a different sphere from it and intersecting mainly in times of crisis or opportunity (for capitalism).[35] However, Nancy Fraser writes in *Capitalism: A Conversation in Critical Theory* that democracy—an idea and a process that has aspects of both modernity and Enlightenment within it, and so comprises two points of the triad simultaneously—is 'inherently in tension' with capitalism. She goes on to contradict this idea somewhat by stating in the next sentence of her essay that the tension 'appeared to be compatible [but] only briefly, in the exceptional period following World War II' when the golden age of social-democratic capitalism in the West produced an extraordinary few decades of growth, profits, jobs and relative social harmony.[36] The 'tension' that Fraser speaks of is in fact *inherent* (to use Fraser's own term in its more exact meaning) in that it is fundamentally constituting of the relationship between modernity, Enlightenment and capitalism to form an interrelationship that allowed each to be what they became. The tension is both inherent and dynamic, and since the eighteenth century modernity

and Enlightenment thought co-evolved to be the stabilisers for an ultimately unstable social relation based upon exploitation, class-based repression and expropriation. The triad of modernity, Enlightenment and capitalism were *alway*s and necessarily compatible because they emerged as historical forces that were the social, economic and intellectual expressions of the same turbulent post-Reformation milieu.[37] Far from being 'only briefly compatible', modernity would be unrecognisable without capitalism.[38] And in the case of the Enlightenment, its foundations as a discourse were laid by thinkers who were themselves often nascent capitalists (capitalists before the term was coined), or were supporters of it, such as Benjamin Franklin and Adam Smith. Moreover, many of its concepts of progress and universality dovetailed well with a certain strain of capitalist ideology. And, as Terry Eagleton reminds us, the term 'ideology' itself was invented by the 'ideologues of the French Enlightenment.'[39]

It follows that if the mutation of capitalism devours its children then it devours its siblings, modernity and Enlightenment, too. That capitalism undermines modernity and Enlightenment is in itself not such a radical proposition; this is essentially what the quotation from Streeck, for example, says. The difference, however, lies in the emphasis on the need to recognise digitality as having transformed capitalism, as having caused a mutation within it, and it is through this recognition that we must analyse and consider any 'end of capitalism' scenarios. Through the adaption and extension of Gehlen's 'circle of action', the ancient technology relationship that is the core of our analogue essence, we find insight into the effects of widespread, permeating and networked digital technology. Digitality separates humans from this original dialectic, thereby alienating human action from the creation of a human-scaled and humanly-recognised natural environment through analogue techniques of 'strengthening', 'facilitation' and 'replacement'.[40] Under digitality the alienation from the essence of who we are as analogue beings is much more radical than Marx or Lukács imagined, because digital technology represents a little-understood new category of technology. Moreover, through the use of Jaeggi's work on alienation we find a new way to think about digitality: as a 'relation of relationlessness', where we have fewer meaningful and humanly expressive bonds with technology. Within digitality we are becoming adjuncts to an increasingly autonomous and automated capitalism, a system so complex and opaque in its new digital processes that it is no longer sufficiently understood as a totality by anyone.

How does day-to-day digitality do this? How does the mutation of capitalism destroy the very conditions ensuring its survivability, killing its host, as a cancer would, and thereby ultimately killing itself? Much of the theorising and evidence-gathering about the 'end of modernity', for example, has already been done, and theorists such as David Harvey, Jean-François Lyotard, Ihab Hassan,[41] Scott Lash and John Urry,[42] and Fredric Jameson,[43] to mention only a few, did the spadework of identifying the transformation in capitalism, and by extension, in modernity, as it occurred in nascent form around them in

business, in arts, literature, architecture and, centrally, in my view, in production systems during the 1970s and 1980s. These analysts of western modernity in its eclipse identified the major economic, cultural and social aspects of the shift: the now familiar tropes of 'fragmentation', 'progress', 'relativism', Lyotard's 'incredulity towards metanarratives',[44] and so on.

My contribution here is to focus on the role of digital technology, without which the demise of classical modernity—and the rise of economic globalisation which generalised the demise—would not have been possible. Digitality's effect has been both misrecognised and underestimated. This is partly due to the fact that media and technology theory were in their infancy when Harvey et al. wrote; partly it is because the then not-very-porous disciplinary frontiers between critical theory, political economy, cultural studies and literary studies left each under-equipped to appreciate the changes underway; and partly it is due to a dogmatic strain in Marxism as a political ideology that placed a narrow reading upon social, economic and cultural phenomena. And despite his 'spatial' contribution to the operation of capitalism, David Harvey is most culpable here, with his extraordinary influence as a Marxist thinker in the Anglosphere having a particularly damaging effect on our understanding. By foregrounding the concept of digitality, however, it is possible to see now that digital technology is a new category of technology and that its newness and rapidity of spread has left us generally unprepared, intellectually and as users, to see the digital and its networking function as requiring a careful analysis in comparison to that which it was supplanting. If one accepts this concept of digitality, then the prospects for capitalism, and more importantly for any social-democratic alternatives to it, are worse than we thought—and with a different locus.

The undermining of the Enlightenment legacy has many intersections with the fate of modernity. To help appreciate the extent of this I draw here upon Tzvetan Todorov and his work *In Defence of the Enlightenment*.[45] In it he usefully reduces all Enlightenment thought to three main (and interrelated) elements that 'produce countless consequences of their own'.[46] These are: autonomy; the human end purpose of our acts (humanism); and universality. Todorov's distillation of the Enlightenment's basic components allows us to see with more sharpness how digitality does its work. So, for example, as Kant wrote in his 1784 work *What is Enlightenment?*:

> If we are asked, 'Do we now live in an enlightened age?' the answer is, 'No', but we do live in an age of enlightenment. As things now stand, much is lacking which prevents men from being, or easily becoming, capable of correctly using their own reason … with assurance and free from outside direction.[47]

We do not live in an enlightened age, but neither do we any longer live in an age of enlightenment, nor enjoy much of its inheritances. Individual autonomy, becoming anyway under liberalism only a pale approximation of the individual

'freedom' that was for Kant a precondition of Enlightenment, is being undermined by the loss of analogue freedom—undermined by automation and by a post-modern alienation that flows from digitality's effects. With the diminishment of this basic precondition, it becomes now extraordinarily difficult to situate humanity at the centre of the purpose of our actions. So-called liberal individualism, which had some communitarian undergirding until relatively recently,[48] is itself transforming. Powered largely through social networks, it produces a new form of mass-individuated narcissism: an alone-together agglomeration of millions connected by fibre-optic cables and Wi-Fi, and for whom the illusory Californian Ideology of independence, uniqueness, personal choice, and self-realisation seems achievable. In this context, the politics of identity, or 'identity liberalism' as Mark Lilla terms it, becomes the new default political position. Here, younger and digitally native generations increasingly view themselves first and foremost as unique individuals, who will reach out at some point (or not) to an identity community (often online) in which they see themselves reflected as part of a wider virtual community.[49] Ideas of class, of social solidarity, of liberal democracy and of a humanism that puts the collective prior to the individual, are considered as outdated tropes from a totalising and authoritarian modernity that produced the racist and homophobic cultures that they seek to escape. Considered, that is, by those who actually consider it. In this sense Todorov's Enlightenment component of 'universality' has, ironically, been hollowed out and turned on its head by digitality. The Enlightenment universal has become a *digital* universal, a universal homogeneity of post-modern autonomy and post-modern individualist humanism.

Democracy, in its sundry world forms, as a process and as an institution, gets caught up in this general diminishment of capitalism's support structures. Digitality undermines the function and constitution of institutional political parties that, in Europe and North America, were founded and grew in tandem with Enlightenment thought, modernity and capitalist industrialisation. Parties that reflected class interests in an evolution of over 200 years, now reflect little beyond their dwindling memberships and the (usually) pro-business ideologies of the party elites. Corporate capture by what Robert Reich (himself a 1990s Clinton-era insider, and therefore close to much of the action) calls 'supercapitalism' is either the reality or the imminent danger for institutional political parties in Europe and North America.[50] If not much else, Reich's book is at least a useful marshalling of facts and figures from an insider's sources. However, the thesis is overblown, portraying as it does the many depredations of capitalism upon democracy as evidence of capitalism's power and a burgeoning rule-the-planet vitality. In fact, capitalism's capture of democracy is one more aspect of its decline. Bourgeois democracy, with its class-based parties and organised labour, could exist in dynamic tension with the business and middle class that I referred to above. They could act as a check upon each other when necessary. For example, in the US in the 1930s, and across much of Europe after the Second World War, bourgeois governments would legislate to control the

more extreme impulses of capitalism in respect of technology use, wage levels and working conditions, tax, social security, trade policy and so on. Things are different now. The unprecedented influence of big business on democratic institutions can be seen as a response to the crisis of accumulation that drove capitalism toward globalisation. The need to shift accumulation to the wider, global scale, especially in the Anglosphere, entailed that governments abrogated much of their democratic power to the needs of business. And they did this notwithstanding the threats to the national and social interest through the rust-belting of swathes of manufacturing, of steel production, heavy industries, and so on, as the externalities of neoliberal globalisation. Not only will this fail to overcome the problem of capitalism's sustainability, but it has led to the preliminary phase of 'ungovernability'[51] that Streeck writes about. And this, in turn, will lead inevitably to a failure by the captured institutions of governance to create an environment of stability and relative order that the process of accumulation requires—in politics and society as well as in the economy.

Digitality now has its own political dynamic, a problematic one for democracy. Much of the political energy of many young people, intellectuals, minorities and idealists of all sorts, has migrated online. A couple of generations' worth of people under forty have known hardly any other kind of political activity. Nonetheless, digital politics in virtual time and space has a momentum and a temporality (a speed of process) that differs radically from the offline world of parliaments and congresses. The political theorist Sheldon Wolin spotted this asynchrony as early as the mid-1990s. He wrote that 'political time is out of synch with the temporalities, rhythms, and pace governing economy and culture'.[52] The temporal disconnect between politics and economy was often superficially considered as a process where 'politics always plays catch-up' to technological developments, such as the ethical gaps that emerge with advances in medicine, or in privacy issues. However, the damaging effects of digitality upon the polities of the world were part of a creeping process of disconnect and decay. For at least twenty years in the West, offline politics has retreated into a netherworld peopled more than ever, through a rigid selection bias, by a class of career politicians: besuited men and women, often from law schools or business, who spend large parts of their careers within institutional bureaucracies and as a result have dwindling connection to their constituents or wider public—citizens who are anyway too busy establishing their own political communities online.

Referring to the activists of Occupy Wall Street and other such movements around 2011–12, Jodi Dean decried the 'quick fix of digital politics', as practised by those millions disaffected by political institutions, as destined to fail. This is because, she argues, the time-consuming and *longue durée* of face-to-face political work, of organising, of planning, of agreed-upon policies, and of hierarchies of roles—are missing, or are unable to properly function, in cyberspace.[53] That digitality is both asynchronous and antithetical to democracy was spectacularly and disastrously exposed just as Dean was writing. The Arab

uprisings of 2011 were widely regarded at the time as a triumph of a revitalised democratic impulse through digital media. Autocracies tumbled or trembled as millions coordinated protests through Facebook and Twitter and occupied the streets and squares of the region. But these activists had thrust themselves into an accelerated digital sphere where their Enlightenment-derived aspirations, wherever they may have existed, were too far out of sync with both the temporality of their ideas and the political realities of their region. The political analogue of nature's grassroots could not find the soil in which to strike, nor the time for its cultivation. There were no political green shoots to grow because there is no equivalent for the earth's soil in the virtual network. Moisés Naím generalised this same point in 2014:

> …a powerful political engine is running in the streets of many cities. It turns at high speed and produces a lot of political energy. But the engine is not connected to wheels, and so the 'movement' doesn't move. Achieving that motion requires organisations capable of *old-fashioned* and permanent political work that can leverage street demonstrations into political change and policy reforms. In most cases, that means political parties.[54]

In the West, the undermining of the roots of capitalism's sources of stability and legitimacy has left it in a precarious state. The political institutions that are needed as either capitalism's sustenance as part of the historical triad, or as its antithesis, that is to say as the foundations for an alternative to it, are withering or ineffectual today. In China, or Russia, to take two salient examples, democratic political institutions are either rejected altogether, as in the case of China, or are stymied at every turn by a post-Soviet political culture of authoritarian gangsterism.[55] Further afield, the traction of democracy begins to slide in countries such as Hungary, Poland, the Philippines, Nicaragua, Venezuela and Turkey, where strongmen either take power, or are given it in the populist turn of political fear that has seeped into the civil societies of Europe, North America, Latin America, South East Asia and elsewhere.

How Will Capitalism End?

Perhaps now more than ever it is vital to reflect, as Harvey, Streeck, Fraser and many others have done, on 'how will capitalism end?' However, we need first to prioritise. And by that I want to say something different: that is, to argue that the priority target, for those who seek a more democratic and environmentally sustainable world, is not capitalism, nor is it the project of reviving or creating an alternative to it. These can wait. These have to wait. The priority must be the process of digitality that has grown up so quickly as to envelop us, invisibly, and largely without our realising it. It is not a classical Weberian Iron Cage of

Zweckrationalität that traps us, however. We are instead being *isolated* from the analogue universe by a logic that is growingly autonomous and works against the humans who have always been its antithesis. And we are being *alienated* by machines that are conceived and implemented and finessed and made more powerful every day to replace us as the source of labour, but which at the same time extract value from us in our assigned role as both subject and object of digitality. We have to recognise what has happened to modernity, to Enlightenment legacies, and to capitalism. We have to recognise that the information technology 'revolution' has been just that—an actual *social revolution*, in the fullest sense that Marx supposed, and not simply the transformation of economic processes through machines.

Contemporary thinking that utilises Marxism, political economy, critical theory, media theory, or combinations of these and more, often repeats the familiar tropes of hope, or justice, or the need to organise at the grassroots. Often such thinking will seek to freshen or contextualise the theory by arguing for a new relevance of Gramsci, or Deleuze, or Žižek, or whoever seems to be the best recent interpreter of Marx, and who has the answers for us. Moreover, such thinking (and David Harvey's canonical treatment of Marx's original work is salient here) can often parse Marx over and over again—seeking to find echoes of our present condition in the conditions of late-Victorian capitalism. The effect of such research is to make you feel, as you read it, that you could be living in the 1960s, or 1970s, in terms of their sources and in the application of theory.

Or you could feel confused. Slavoj Žižek is a slightly different Marxist and is a good example of how an essentially traditional thinker adapts to a global audience in the age of the internet—but in a way that does little to further our understanding of the present conjuncture. In his 2017 work *The Courage of Hopelessness: Chronicles of a Year of Acting Dangerously*, Žižek excoriates what he seems to accept as a victorious capitalism. To try to make sense of it, or maybe to give the impression of erudition in terms of his evident command of social theory, Žižek draws from a sprawling array of narratives—a cacophony from popular culture and cultural studies, reportage and political economy, international relations and psychoanalysis—and brings these to his argument. And the argument is that if we imbibe his brand (and he is a media brand) of knowledge, then we can face the situation of hopelessness with 'courage'. But that there are no guarantees, not even the consolation of hope, is what makes Žižek something of an outlier in left theory. Our reward for having the courage to recognise our hopelessness is the *knowledge of it*—and through this to realise that any light at the end of the tunnel is 'probably another train approaching'.[56] We must have the courage to confront this too, he insists; to have the fortitude to embrace the catastrophe, and so to still be there, and ready, for when the extended downturn somehow becomes an upturn. Actually, what Žižek provides is a form of Gothic entertainment, black humour instead of a diagnosis, a horror film for the jaded about the times we live in, from a show-off director who knows his audience and his subject(s) too well.

Judith Butler judged this intellectual trend earlier. She sees an almost dramaturgical 'who said what, and who said what back' process among those interested in Marxism, where the reader can sit back and enjoy the tranquilliser of endless theory and outrage, with the effect being that activist Marxism is nullified by the focus on culture, and culture nullifies itself by embracing relativism. She writes:

> I propose to consider two different kinds of claims that have circulated recently, representing a culmination of sentiment that has been building for some time. One has to do with an explicitly Marxist objection to the reduction of Marxist scholarship and activism to the study of culture, sometimes understood as the reduction of Marxism to cultural studies. The second has to do with the tendency to relegate new social movements to the sphere of the cultural, indeed, to dismiss them as being preoccupied with what is called the 'merely' cultural, and then to construe this cultural politics as factionalizing, identitarian, and particularistic.[57]

And so Marxism devours itself. Just like the capitalism with which it shares so much of its modern and Enlightenment DNA. And in so doing it impoverishes or delegitimates any basis for an adaptive theory-building that could incorporate new ways to think about technology—both as media and as the essence of what it is to be human and thereby intellectually equipped to see the analogue–digital question as one that is not only legitimate, but urgent.

Again it is Streeck, of the increasingly exclusive *New Left Review*, who provides more evidence of the symptomatic misdirection of theoretical energy. In Streeck, a potentially insightful analysis is rendered essentially fruitless through its inattention to the actual effects of digitality. At the end of his book, after making his case for the need for a 'public sociology', beginning in the university, to arrest the collapse of capitalism and the simultaneous destruction of its ill-prepared antithesis, he sums up the issues:

> For sociology to become truly public sociology … it must get ready for the moment in which the foundations of modern society will again have to be rethought… That moment … is approaching, and when it will be here (sic) sociologists should have the intellectual tools at hand for society to understand what is at stake. […] we cannot begin early enough to challenge the intellectual hegemony of contemporary economics over contemporary understandings of economy and society. […] it is high time for the mainstream of the discipline to remember its roots and join the battle, even though we know that the capitalist reorganisation of the university that is underway everywhere is not least designed precisely to eliminate critical reflection, for the all-powerful purpose of economic efficiency.[58]

The reliance on a single academic discipline to rescue 'modern society' is telling. Even more telling is that there is still no mention of technology, notwithstanding Streeck's identification of the damaging instrumental 'efficiency', largely computer-driven, that has been let loose upon the universities. There is no comment either, on media—until the book's final sentence when he delivers what is in effect a suicidal blow to his general thesis:

> But then, if public sociology cannot make itself heard in *this* public, how can it [the university] hope ever to be noticed in the world of YouTube, Facebook, Fox TV and the BILD-Zeitung?[59]

In his own reckoning, universities are no longer islands of critical reflection, but profit-seeking organisations that are as riddled with digitality as any other institution or realm of public life. Leaving this sentence till last seems to indicate that Streeck at some level of awareness *knows* where the real problem—and therefore real priority—lies. But either through habit of thinking instilled over the length of a whole career, or through a pervading indifference to technological change, which he sees almost as a neutral force of nature,[60] he is unable to make the logical next step, to consider that the *actual* 'foundations of modern society' lie at the deepest level in the human relationship with technique.

Digitality is not primarily about Facebook, or Google or any of the other tech giants. These are only expressions of the logic of computing in the service of capitalism given much freer rein by democratic institutions. To 'punish' these corporations as the EU and other countries have sought to do, by imposing large financial penalties, or by legislating that they make their platforms and their algorithmic logic more transparent, is no solution either. Litigation can be, is, and will be drawn out for years by corporations who can easily afford the costs. And when final verdicts are delivered in cases of 'abusing market dominance', such as for Google, then the fine will likely be reduced, or easily absorbed by immense company profits. And by that time the technological and market context will probably have shifted (in the tech company's favour) anyway. Neither is digitality primarily about the near-future explosion of machine-learning robots, or a far-future tipping-point when artificial intelligence becomes a reality. These capitalist destinations are where the signposts are pointing, but this is not the immediate threat either. Digitality is about what the logic of digital technology, in its rudimentary and more sophisticated applications, is doing today—to individuals, institutions, economies and societies. A new form of alienation, an 'alienation of the technological everyday'[61] based upon a new category of technology, is the first problem. And having already theorised this alienation as the core effect of the mutation of accumulation it is still necessary to detail this alienation at its everyday level expression.

I will make a final point about the seemingly habituated need to confront capitalism in the traditional way, as many Marxist, socialist, and progressive analyses are still inclined to do. In their 2018 book *Capitalism: A Conversation*

in Critical Theory, Nancy Fraser and Rahel Jaeggi[62] devote a section, 'Contesting Capitalism', to how critical theory should respond to capitalism's destructive malaise, and to the populist turn it has generated in politics over the last fifteen years. Jaeggi asks Fraser: given we are faced with a collapsing neoliberalism, 'what do we do now?' I quote Fraser's reply at some length, as it is revealing:

> My instinct is to seize the moment and go on the offensive. … [N]either hyper-reactionary neoliberalism nor progressive liberalism will be able to (re)establish a secure hegemony in the coming period and … we face a chaotic, unstable interregnum, which … is fraught with danger. Nevertheless, there could be an opening now for the construction of a counterhegemonic bloc around the project of *progressive populism*. By combining in a single project an egalitarian, pro-working-class economic orientation with an inclusive non-hierarchical recognition orientation, this formation would have at least a fighting chance of uniting the *whole* working class: not just the fractions historically associated with manufacturing and construction, whom reactionary populists and traditionalist leftists have mainly addressed, but also those portions of the broader working class who perform domestic, agricultural, and service labor – paid and unpaid, in private firms and private homes, in the public sector and civil society—activities in which women, immigrants, and people of color are heavily represented. By wooing both segments, the expropriated as well as the exploited, a progressive populist project could position the working class, understood expansively, as the leading force in an alliance that also includes substantial segments of youth, the middle class, and the professional-managerial stratum.[63]

'Optimism of the will' was one of Gramsci's more unfortunate phrases. With it, theorists of a certain disposition are always able to brush uncomfortable realities to one side. Adorno was less vague, but also less optimistic when he said that his critical theory provides the diagnosis, and that others should provide the prognosis that may logically follow. Fraser here provides both, and to inadequate effect. Nowhere in this passage, and nowhere in the entire 'conversation' with Jaeggi, is there mention of computers, information technology, media, networks or technological change more generally. Moreover, there is seemingly no awareness of the effects of these as an indispensable part of a neoliberal offensive since the 1970s against working class solidarity, party organisation and so on. A wider political effect has been the growth of a fickle and shifting ideological commitment by millions on the left—and an expanding identitarianism that is at the root of the populist turn and is the toxic antithesis of the 'progressive populism' that Fraser calls forth as the solution.

This is important: Fraser is one of the leading diagnosticians in Western political and critical theory, and yet delivers a prognosis that could have been written in 1988 instead of thirty years later. Such analysis is essentially conservative

and has to be seen as another symptom of Marxist and progressive theory devouring itself. Under siege and tormented by a lack of clear signals that capitalism's sliding chaos is an historical opportunity of a different kind, thinkers revert instead to orthodoxy, to optimism, to pessimism, or to black humour in the case of Žižek the contrarian. The novelty of digitality should indicate that it is necessary to shun the extinct intellectual conflicts and the fake optimism, and reach, for now, to another mode of political thinking that is rejected in more radical circles, and that is *reformism*. Reformism would begin by prioritising digitality, not capitalism, as the immediate danger. To understand and control digitality would have the initial effect of saving capitalism from itself. But such a reformism is in fact radical, and it would have the longer-term effect of re-creating the social, economic and political bases of capitalism's antithesis. This would be a project for the rearticulation of the sensibilities and attitudes of modernity (a new modernity) to replace the desolation of the present postmodernity. If we fail in this then Streeck's interregnum will continue to unfold in its hellishness, and Žižek's hurtling train will keep on towards us. And as we hope and wait and theorise yet more, real social change or social revolution will have become a chimera for the dwindling intellectual left to continue to be optimistic about. By then the illusion will be in danger of becoming permanent because the modern social foundations of class and politics needed for the articulation of actual progressive change will have gone.

Notes

[1] Slavoj Žižek (2017) 'Ideology Is the Original Augmented Reality' *Nautilus* (54). http://nautil.us/issue/54/the-unspoken/ideology-is-the-original-augmented-reality

[2] David Harvey (1982/2007) *The Limits to Capital*. London: Verso, p.156.

[3] Ibid., p.208.

[4] Ibid., p.159.

[5] Noel Castree (2007) 'David Harvey: Marxism, Capitalism and the Geographical Imagination', New Political Economy, 12(1), 97–115, p.103.

[6] See the discussion in Chapter I, pp.6–7.

[7] See the discussion in Chapter 2, p.18.

[8] Karl Marx and Friedrich Engels (1976) 'The Manifesto of the Communist Party' in *Selected Works*. Moscow: Progress Press, p.40.

[9] Cited in Deborah Kelsh, 'Cultureclass' in *Class in Education: Knowledge, Pedagogy, Subjectivity*. Deborah Kelsh, Dave Hill, Sheila Macrine (eds.), London: Routledge, p.24.

[10] Karl Marx (1976) *Capital Volume 1*. Harmondsworth: Penguin, p.39.

[11] Karl Marx (1973) *Grundrisse*, M. Nicolaus (trans.). London: Penguin., p.538.

[12] Dan Schiller (2000) *Digital Capitalism*. Cambridge, Mass: MIT Press, p.xvi.

[13] Dwayne Winseck (2011) 'The Political Economies of Media and the Transformation of the Global Media Industries' in *Political Economies of Media*, Dwayne Winseck and Dal Yong Jin (eds.) New York: Bloomsbury, p.23.

[14] The term is from Roy Bhaskar's *Dialectic: The Pulse of Freedom* (2008) (Abingdon: Routledge) and is derived from Foucault as a way to describe the totalising drive toward control that networked information technologies now make possible. See p.255.

[15] The tech companies (if not the data carriers) dream of a world of total and free and powerful wi-fi: Project Loon is a balloon-based system by Google while Facebook has opted for a drone-based solution. Many more government bodies and local independent initiatives are oriented toward this goal.

[16] Dwayne Winseck (2011) 'The Political Economies of Media and the Transformation of the Global Media Industries'

[17] Cited in David Lyon (2005) *Surveillance Society*. Buckingham: Open University Press, p.91. See also Shoshana Zuboff's *The Age of Surveillance Capitalism: The Fight for the Future at the New Frontier of Power*. New York: Profile Books (2019)

[18] Daniel Bell (1962) *The End of Ideology*. New York: The Free Press.

[19] A good example of the atmospheric becoming actual, and with the user still oblivious to the process, came eventually to public awareness in 2015. The British university admissions system (UCAS), which has a very large database of personal student information, sold that information, legally, without the knowledge or permission of the students, to Vodafone, O2 and Microsoft, amongst others, for £12 million. See Lucy Ward (2014) 'Ucas sells access to student data for phone and drinks firms' marketing' *The Guardian Online*: https://www.theguardian.com/uk-news/2014/mar/12/ucas-sells-marketing-access-student-data-advertisers

[20] Karl Marx (1976) *Capital Volume* 1. p.742.

[21] Julia Ticona, Alexandra Mateescu and Alex Rosenblatt (2018) *Beyond Disruption: How Tech Shapes Labor Beyond Domestic Work and Ridehailing*. Data & Society Institute: https://datasociety.net/wp-content/uploads/2018/06/Data_Society_Beyond_Disruption_FINAL.pdf

[22] *Ibid*. p. 2 and *passim*.

[23] See Paul Karp (2018) 'Amazon's labour-hire deal and the impact on collective bargaining' *Guardian Online* https://www.theguardian.com/australia-news/2018/jan/20/amazons-labour-hire-deal-and-the-impact-on-collective-bargaining. Responding to a question by the reporter on the need for third-party labour hire, an Amazon spokesperson in Australia was quoted as saying that this was necessary: 'to enable us to move quickly, access talent and manage variations in customer demand'

[24] Nancy Fraser and Rahel Jaeggi (2018) *Capitalism: A Conversation in Critical Theory*. Cambridge: Polity, p.13.

[25] Fraser and Jaeggi's otherwise excellent and valuable discussion is nonetheless indicative of the continuing problem of disciplinary boundaries

remaining in place. As with Wolfgang Streeck, whom I discussed in Chapter One, nowhere in their book is there more than a passing reference to media (internet, social media, etc.) and nothing—apart from a tantalizing reference (p.37) to digitality's commodification prowess—about the role of technology as having a central function within capitalism.

[26] See Karl Marx (1854) 'Peuchet: On Suicide' in *Gesellschaftsspiegel*. https://marxists.catbull.com/archive/marx/works/1845/09/suicide.htm

[27] Wolfgang Streeck (2016) *How Will Capitalism End?* London: Verso, p.13.

[28] Ibid.

[29] Ibid., p.14.

[30] Ibid.

[31] It should be noted, however, that the post-2008 economic crisis and the backlash against neoliberal globalisation have meant that some of the 'moderating forces', such as the nation state, that Streeck speaks of, are being reconstituted in the US, in a good portion of Europe and elsewhere, as 'nationalist-populist' states that may no longer be such a moderating force for neoliberalism or for capitalism's globalising logic. Wendy Brown, for example, in her *Walled States, Waning Sovereignty* (2010) (New York: Zone Books) shows how physical walls are proliferating at borders around the world as a populist-nationalist reaction to borderless globalisation.

[32] Jason W. Moore (2016) *Anthropocene or Capitalocene? Nature, History and the Crisis of Capitalism*. Oakland, CA.: Kairos Books

[33] Ibid., p.5.

[34] Immanuel Kant (2013) *Immanuel Kant's Political Writings*. H. S. Reiss (ed.) Cambridge: Cambridge University Press, p.54.

[35] An example of an explicit separation we see in Ellen Meiksins Wood's 'Capitalism or Enlightenment?' in *History of Political Thought* 21(3), 405–426. Wood is quite clear about it when she argues that 'capitalism represents a different historical stage, which transcended or negated the Enlightenment. It is the product of a distinct historical process' (p.408)

[36] Nancy Fraser and Rahel Jaeggi, (2018) *Capitalism: A Conversation in Critical Theory*. p.79.

[37] See Sascha O. Becker and Ludger Woessmann (2009) 'Was Weber Wrong? A Human Capital Theory of Protestant Economic History', *Quarterly Journal of Economics* 124(2), 531–596.

[38] Marshal Berman (1982) *All That is Solid Melts into Air: The Experience of Modernity*. London: Verso.

[39] Terry Eagleton (1991) *Ideology: An Introduction*. London: Verso, p.5.

[40] See Chapter Two.

[41] Ihab Hassan (1985) 'The Culture of Postmodernism' in *Theory, Culture and Society* 2(3), 119–132.

[42] Scott Lash and John Urry (1987) *The End of Organised Capitalism*. Cambridge: Polity Press.

[43] Fredric Jameson (1995) *Postmodernism, Or, The Cultural Logic of Late Capitalism*. London: Verso.
[44] Jean-François Lyotard (1979) *The Postmodern Condition: A Report on Knowledge*. Manchester: Manchester University Press, p.xxxiv.
[45] Tzvetan Todorov (2010) *In Defense of the Enlightenment*. London: Atlantic Books.
[46] Ibid., p.5
[47] Immanuel Kant (2013) *Immanuel Kant's Political Writings*, p.57.
[48] Robert Putnam's *Bowling Alone* (2000) (New York: Simon & Schuster) was one of the first to spot what he saw as a 'decline of social capital'.
[49] Mark Lilla (2017*) The Once and Future Liberal*. New York: Harper.
[50] Robert Reich (2009) *Supercapitalism: The Battle for Democracy in an Age of Big Business*. London: Icon Books.
[51] Streeck, *How Will Capitalism End?* p.14.
[52] Sheldon Wolin (1997) 'What Time is it?' *Theory and Event* 1(1). https://muse.jhu.edu/article/32440
[53] Jodi Dean (2012) 'Occupy and UK Uncut: The Evolution of Activism' *The Guardian Online* https://www.theguardian.com/commentisfree/2012/dec/27/occupy-uncut-evolution-activism
[54] Moises Naím (2014) 'Why Street Protests Don't Work' *The Atlantic* April 7. http://www.theatlantic.com/international/archive/2014/04/why-street-protestsdont-work/360264/
[55] For recent works on this, see Elizabeth Economy's *The Third Revolution: Xi Jinping and the New Chinese State.* (2018) Oxford: Oxford University Press; and Peter Pomerantsev's *Nothing Is True and Everything Is Possible: The Surreal Heart of the New Russia.* (2015). London: Public Affairs.
[56] Slavoj Žižek (2017) *The Courage of Hopelessness: Chronicles of a Year of Acting Dangerously*. London: Penguin, p.xii.
[57] Judith Butler (1998) 'Merely Cultural' *New Left Review*, 1/227, January-February, 33–44.
[58] Streeck, *How Will Capitalism End?* pp.250–251.
[59] Ibid., p.251. (emphasis in original)
[60] Ibid., p.26–27.
[61] A potential-filled phrase from Leonardo Impett, writing in the *New Left Review* in 2018. It comes from his dismissive review of Max Tegmark's *Life 3.0: Being Human in the Age of Artificial Intelligence.* Impett critiques the book well, but from the standard Marxist perspective, based on the simple claim that AI does not exist, and will not exist for a very long time to come. Tegmark is engaged in science fiction, a kind of escapism, Impett claims (correctly, in my reading of the book) whereas what he *should have done* is to present 'a social critique of the present through the alienation of the technological everyday' (p.159). The pregnant sentence is left hanging by this researcher in the digital humanities, who implies that Tegmark has

not 'read his Marx'. Impett has perhaps read too much of it in the *New Left Review* vein, and so the alienation he refers to is of the traditional kind and therefore needs no elucidation in the context of the 'technological everyday', because it is the same as it has always been from the time of Marx himself.

[62] Nancy Fraser and Rahel Jaeggi (2018) *Capitalism: A Conversation in Critical Theory.* The book is a 'conversation' between two of the foremost critical theorists of our time, who have been rightly influential in arguments across a whole range of critical issues, and Jaeggi's work on alienation has had a deep impact upon my thinking in this book and elsewhere. But in this 225-page exposition, there is barely any mention of media, or technology, or the internet, etc. The index lists fourteen entries with the word 'social' as prefix ('social order', 'social struggles', and so on) but nothing on 'social media', a technological form that has had an immense effect upon the 'social' at almost every register.

[63] Ibid., pp.216–217.

CHAPTER 5

The Economy of Digitality: Limitless Virtual Space and Network Time

> Algorithmic cognition is central to today's capitalism. From the rationalisation of labor and social relations to the financial sector, algorithms are grounding a new mode of thought and control.
>
> Luciana Parisi, 2016, p.98.[1]

The economy of digitality is a space-time economy. That is to say, the relationship to time and space through technology, and the nature of this time and space as the articulation of the accumulation process, is central to what the post-modern economy is and what it does. This is new and different in that digital technology acting as driver of accumulation has distinctive manifestations that we must recognise and understand.

Here I will look at time and space as digital and networked phenomena that are foregrounded by digitality in the ways that I have described—and use this frame as a way to consider the global economy as a whole. The central point of the discussion here is that the effects and spread of digitality have not been uniform. This is in the nature of capitalism, as much in its classical mode—think Leon Trotsky and his 'uneven and combined' theory of capitalist development—as it is in its mutated digital form that dominates today.[2] Given that accumulation—notwithstanding its mutation in the context of digitality—is *still accumulation*, with the same objective of extracting value from labour, then Trotsky's theory is a useful way to plot and analyse the multifaceted articulations of the digital global economy.

Let us begin with a consideration of some of the ideas around the transformation of perceptions of time and space that has been a central motif within the globalisation debates since the 1980s. To begin with we can put aside many of those theories that emerge from business journals and management books.

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Invariably, these are celebratory in the context of an assumed and unreflective technological 'progress' that propels manufacturing, production, consumption, communication, etc. to new levels of 'efficiency' and thus humanity to new levels of prosperity.[3]

One of David Harvey's most important and lasting contributions to Marxist scholarship, and to the political economy analysis of capitalism more generally, has been his 'time-space compression' thesis. His 'spatializing' of the accumulation process serves, still, as a most fruitful way to think about accumulation, about globalisation and, as I will detail shortly, about *culture*. In what has become a much-quoted passage in *Postmodernity*, Harvey writes that with the term 'time-space compression' it was his intention to 'signal … processes that so revolutionise the objective qualities of time and space that we are forced to alter, sometimes in quite radical ways, how we represent the world to ourselves'.[4] The world as a space of communication, transportation and production has become dramatically smaller, he argues, and so the experience of this rapid transformation needs to be understood by the left as it will be 'challenging, exciting, stressful … sometimes deeply troubling, [and] capable of sparking … a diversity of social, cultural, and political responses'.[5] The sociologist Anthony Giddens proposed something similar to Harvey, and did so earlier, a fact Harvey indicates only in passing in *Postmodernity*.[6] Giddens calls his theory 'time-space distanciation'. Here, the growing 'intensification' of the dynamics of modernity serve to order social life and social relations in ways that link 'local happenings' to events 'occurring many miles away and vice versa'.[7] In more philosophical mode, Frederic Jameson, in his essay 'The End of Temporality', evokes a late-capitalist space-time in which subjective experience is reduced to a constant present, a present that is nonetheless still an unfolding telos, though one that never quite terminates, but which would signal the 'death of the subject', and hence the end of the Marxist project of revolution or emancipation, if it ever did.[8] And more recently, Ben Agger looked specifically at digital connectivity, primarily through the pervasive smartphone, to argue that 'smartphoning creates a kind of "iTime" that challenges the pre-Internet boundaries between public and private, day and night, work and leisure, space and time'.[9] Intriguingly and somewhat in tune with the concerns of the present book, Agger goes to on to write that 'iTime is consistent with, and hastens, the expansion and elasticity of the commodity form in late, laptop, fast, post-Fordist, postmodern capitalism.'[10]

These are only a selection from the literature, but they are representative. What characterises them as left-critiques of the transformation of time and space is that they look to some form of classical historical-materialist analysis to understand the phenomenon. But they look to that same analysis as containing, somewhere, the progressive or emancipatory *solution* to its negative effects. To put it another way, the space-time transformation is still set on an established continuum upon which the dialectic unfolds, and if we can identify the specifics of the movement in its new context, then the way forward, or

the solution, be it resistance, organisation, consciousness-raising, or whatever, will reveal itself as a contradiction. To consider the transformation of time and space through the frame of digitality, however, gives a rather different perspective. Such diagnosis offers no immediate prognosis other than the realisation that a new approach, a new political economy, is called for. Digitality, being a new human relation with a new technological category, has deflected the dialectic of postwar/Fordist modernity from its course, and so new explanations for the new sociotechnical context must be found. Two general statements of the problem are put forward here as the basis for an exploration of the transformation of time and space that has constituted the present global economy of digitality. First is that through the aegis of a new technological category, digitality transforms time and space, such that: *digitality alienates, and automation facilitates*. Time and space compression, an abstract concept to begin with, becomes something else through digital networks. It becomes the actualisation of Jacques Ellul's 'exclusion of man' from the primeval relationship with technique and nature.[11] A technologically-specific alienation is the effect: an alienation that maroons us in the post-modern condition of 'relationlessness', alienated not only from technique and nature, but also from our ancient analogue legacies in culture, politics and economy.[12] Second, and following from the first, is that the creation by capital of a digital time and space logic that shapes economy and society according to its own encoded and automated imperatives, leaves people, institutions, societies and cultures with a much-diminished capacity to affect the trajectory in any significant way.

Uneven and Combined Digitality in the Time-Space Global Economy

In his *History of the Russian Revolution* (1930), Leon Trotsky sought to extend the Marxist theory of uneven development.[13] It was a theory first developed in 1910 by Rudolf Hilferding which declared that the early industrialising countries such as Britain, Germany and the US were able to gain competitive advantage over other countries, and were able to increase that lead over time, and so lock in their dominance as industrialisation grew and spread.[14] Trotsky extended this idea into what he termed *uneven and combined* development. Here, those countries being developed through the importation of capital and technology from the advanced countries could 'skip' certain phases of development that the advanced countries had already gone through. Moreover, a developed sector could exist alongside an underdeveloped or 'backward' sector inside the same country. This was a feature of the uneven characteristic. For Trotsky, this was also a contradiction. It could produce negative consequences for the emancipation of the working class, such as the creation of a powerful and indigenous capitalist stratum that could rule an emerging worker class that had had no opportunity to develop the institutions of solidarity and

resistance that had evolved in the advanced capitalisms. This process of unevenness was nonetheless combined across a wider scale through the numerous interconnections between the developed and developing countries by way of the linkages created by capitalist expansion itself. These connections, Trotsky reasoned, could have a more positive effect upon working class consciousness and radicalisation through, for example, awareness of and inspiration from struggles in other parts of the world. This idea also gave substance to his more basic concept of 'permanent revolution'.[15] In his writings over the course of the 1930s Trotsky sought to systematise this idea of uneven and combined capitalist expansion into a more formal economic 'law'. It was Trotsky's ambition to generalise this 'law' as a dialectic determining what he saw to be *the* 'most general law of the [capitalist] historical process' and an ideological counter to the rise of Stalinism and the 'socialism in one country' ideology promoted in that decade.[16]

It is not my intention here to subscribe to any law from within the social sciences, from Trotsky, or from anyone else. I wish only to show how through an adaptation of Trotsky's uneven and combined thesis, we can understand digitality more clearly and see that it generates uneven manifestations across the world—and that these are all combined within a dominant techno-logic.

The mutation of accumulation expresses itself today in a new time-space relationship through a digitality that gives Harvey's 'spatial fix' thesis another dimension. It will be remembered that the 'spatial fix' was Harvey's term to theorise the way capital overcomes its overaccumulation problem by shifting excess capital to new geographic areas, new markets, zones of production, sources of raw materials and so on, to where it may be more profitably deployed. It will be recalled, too, that Harvey, following Marx, saw that this was only a temporary 'fix', one that simply 'transfers the contradictions [of accumulation] to a wider sphere and gives them greater latitude.'[17]

Today, the 'spatial fix' takes on important post-classical and post-modern articulations. This can be understood through an idea I have developed more fully elsewhere, which I term 'outward-inward globalisation'.[18] I will sketch it in outline here. As the term suggests, the 'spatial fix', facilitated by digitality, has given the logic of accumulation two directions of travel—*outwards* into the physical space of the world, much as it has done since the beginnings of capitalism, and *inwards* into the virtual space of society, to create new spaces of accumulation through the new industries and opportunities afforded by an ever-growing networked sphere. Moreover, this 'inwards' logic is also able to colonise, through commodification, pre-existing spaces of society, entering areas of life that were, as Fredric Jameson put it, 'hitherto sheltered from [the market] and indeed for the most part hostile to and inconsistent with its logic.'[19] Let me now outline each direction of travel in its turn, before moving to a consideration of what I see to be the three salient manifestations of the global digital economy, which are *service*, *manufacturing* and *platform* capitalism. From there I will end with a reflection in the context of digitality upon what David Harvey, in his 2005 book

The New Imperialism, termed 'accumulation by dispossession'—which he sees as (still) the major 'feature of what contemporary capitalism is about.'[20]

Outward Globalisation

Much of the process of outward globalisation may be seen as 'conventional' in that it is capital expanding in the way, and for the reasons, that Harvey dissected in his *Postmodernity*. As he puts it, the overaccumulation crises of Western capital:

> ...can to some degree be interpreted, therefore, as a running out of those options to handle the overaccumulation problem. ... As these Fordist production systems came to maturity, they became new ... centres of overaccumulation. Spatial competition intensified between geographically distinct Fordist systems, with the most efficient regimes (such as the Japanese) and the lower labour-cost regimes (such as those found in [the] third world …) driving other centres into paroxysms of devaluation through deindustrialization. Spatial competition intensified, particularly after 1973, as the capacity to resolve the overaccumulation problem through geographical displacement ran out.[21]

Contemporary globalisation began in earnest when the deregulatory effects of the Washington Consensus began to be felt in the mid-to-late 1980s. Harvey's 'geographical displacement' had been going on for at least a decade prior to this time, with the first wave of Newly Industrialising Countries (NICs) such as Hong Kong, South Korea, Singapore and Taiwan attracting much overaccumulated capital from the developed countries in the form of Foreign Direct Investment (FDI).[22] Such expansion is necessarily uneven, with the contingencies of politics, of previous imperial connections, of geo-strategic considerations, and of business opportunity all playing a role in deciding where and when capital gets invested. The inflow of capital to this first wave of NICs, as well as into the second wave that took off in the 1980s in Mexico, Brazil, China, India, Malaysia, the Philippines, Thailand and Turkey, was uneven also in terms of the exportation of Western political values such as democracy. In the 1990s, leaders in countries from Singapore to Malaysia, and from India to China, were clear that the importation of neoliberal markets did not mean the importation of liberal democratic values. Lee Kuan Yew of Singapore, and Mahathir Mohamed of Malaysia, for example, were willing to take Western investment, but insisted on the pre-eminence of 'Asian values' as the guiding form of their modernisation programmes. In 1996 the *Beijing Review* could note with official Chinese Communist Party approval that 'the Western model is not the only way to modernisation'.[23] From the perspective of today it is clear that in China and India, to take the most consequential examples, Western liberal democracy

has gained little traction. China, with its one-party system, is openly hostile to liberalism whilst continuing to seek Western investment;[24] and India, the vaunted 'world's largest democracy', will enthusiastically take Western investment, whilst simultaneously constructing a Hindu-dominated nationalism or 'Hindutva' that is anything but Western or liberal in its political outlook.[25] Third-wave NICs such as Myanmar, Pakistan, Bangladesh, Sri Lanka and Vietnam will also accept investment when they can get it, but they too pay lip service to human rights, anti-corruption strategies, and democratic norms and values, Western or otherwise.[26]

This unevenness in economic and political development is increasingly combined through mutual dependencies that are made possible through the information technology networks that made post-Fordist flexibilisation possible. Asian, European and North American capitalisms, the main sites of capital concentration, are deeply integrated through supply chains in manufacturing that criss-cross land, sea and air. Under construction since the 1970s, these supply chains have formed tightly-organised and complex systems of just-in-time (JIT) scheduling of production and distribution that function around the world, around the clock. They shrink time and space for capital in a digital process that is being more deeply integrated every day through the speed and density of digital connection and interconnection. This networking is largely automatic in its infrastructure-building and maintenance and is propelled and shaped by the logic of the dominant neoliberal imperatives. Conceived initially by Toyota in Japan as an automobile production system that would minimise stock levels, free up warehousing space, and accelerate the speed of the production process overall, JIT has become a metaphor for the economic system as a whole. It is the digitally-driven core of corporate control over global time and space. Businesses, economies and individuals are tied economically, culturally and psychologically to its logic to the extent that we now expect the benefits of its time-space shrinking 'efficiencies' in many aspects of daily life, such as avocadoes jetted in from Fijian farms to French supermarkets in January. But behind the mirage of externality-free efficiency, there is an ideological cost to JIT and the kind of world it makes possible. As Jeffrey Nealon argues in his *Post-Postmodernism, or, the Cultural Logic of Just-in-Time Capitalism*, 'there's no space of pure autonomy outside the dominant form of global economic organisation', which is a neoliberal economic organisation. Nealon goes on to write with just a trace of sarcasm: 'we swim in the same sea as everything else that has been "successful" over the last thirty years—[and so] theory is neoliberal, Microsoft is neoliberal, anti-retroviral drugs are neoliberal, even anti-globalisation protests against neoliberalism are neoliberal in their own way.'[27] Cynicism aside, as a mode of control through a mode of production, this combining of the unevenness of capitalist accumulation strategies through digital networks is unparalleled.

Financialisation is another powerful combiner of uneven economic processes that has ridden on the back of outward globalisation. It is also a comparatively

new phenomenon, and, like JIT, something made possible in the 1970s–80s through the combined affordances of networked computing and neoliberal globalisation. Financialisation is accumulation through the growth of the financial services sector and the exponential array of financial instruments—contracts between parties that may be traded, modified and settled—that now constitute a leading edge of post-industrial capitalism. Today, 'traditional' banking and the financial services sector—which are often one and the same thing—constitute a volatile and precipitous form of accumulation, which is less about creating new wealth through the financing of the creation of new products and services by peopled businesses and industries, and more about what Costas Lapavitsas terms 'profiting without producing'. Financialisation, according to Lapavitsas, has changed the landscape of traditional accumulation and has morphed into a digitalised logic that has 'altered [the] behaviour of the fundamental agents of capitalist accumulation, including non-financial corporations, banks and workers. Finance has reshaped the activities of all three … resulting in new forms of profit.'[28] In particular, financialisation reflects a growing asymmetry between production and the circulation of money. Here, through a sectoral concentration on the latter, Lapavitsas observes an inexorable:

> rise of profits accruing through financial transactions, including new forms of profit that could even be unrelated to surplus value; this process can be summed up as 'financial expropriation'.[29]

This is money made from money: profit from speculation, from leveraging, bonds, shares, stocks, derivatives, interest rate fluctuations, currency exchanges and many other 'instruments'—including accumulation from the indebtedness of workers and the poor across the world. This does not mean, however, that workers and the poor are able to be part of the financial system in ways that would provide stability and a source of income. Financialisation takes place within a closed system made up of a networked global elite with access to financial information and to algorithmic technology that squeezes profit from that information. Proprietary black-boxed automated systems work in closed loop circuits of buying and selling between banks, hedge funds, investment management companies and brokerage firms. The opaqueness of such a lucrative system is a problem not only for regulators around the world but also, ironically, for those with privileged entry to it and who must, on a daily basis, literally gamble through means of a little-understood logic. As Laura Lotti writes, 'these [algorithmic] technologies operate at a temporal scale and degree of complexity inaccessible to the human perceptual system'.[30] Moreover, studies of algorithmic computing at the quantum scale indicate that 'certain things can be described finitely but cannot be decided and are therefore incomputable'. The logic of algorithmic processing at the level of scale and complexity found in the global financial sector, Lotti argues, is therefore essentially detached from material–physical reality, and 'enjoy[s] a mode of

existence proper to [its] own being'.[31] So not only do we lack sufficient understanding of how algorithmic financialisation works, but we fail to fully appreciate that it is an alien logic, an 'ontology of algorithmic objects'[32] that exists as a growingly autonomous source of unpredictable and uncontrollable power that is far removed from the human-scaled analogue world of people and the realities they construct within it.

The objective of extracting profit from the financial money-go-round by means of algorithms that seek to compute and therefore determine the essentially incomputable, ensures that the process will not run without problems. Ellen Ullman, programmer and author of the novel *The Bug*, has described this 'code piled on code' complexity as the basis for our individual and collective disarticulation from the logic of digitality as it acts upon the world. She writes:

> In some ways we've lost agency. When programs pass into code and code passes into algorithms and then algorithms start to create new algorithms, it gets farther and farther from human agency. Software is released into a code universe which no one can fully understand.[33]

The Wall Street 'Flash Crash' of 6th May 2010 occurred when the algorithmic High Frequency Trading (HFT) system inexplicably glitched for around fifteen minutes, causing the Dow Jones Index to drop by 9 per cent, the biggest one-day fall in its history up to that point. The system 'recovered' but the cause of the malfunctioning is still not fully known. What is known, at least by some, is that there is insufficient control over algorithmic capitalism. It is estimated that on average there are a dozen 'mini-flash-crashes' a day in the US part of the system alone.[34] Moreover, in a move set only to increase algorithmic complexity and unpredictability, some trading algorithms are now linked to news sites. And so in 2016 a reported comment by French Prime Minister Francoise Hollande that if the UK wanted a 'hard Brexit' it would get one triggered a selling spiral on the British Pound, which dropped by 6 per cent until automatic trading was halted manually.[35]

Digitality's capacity for 'expropriation through financialisation'[36] is clear—as is its unevenness, with centres of accumulation in New York, London, Tokyo, Shanghai, and a handful of other cities soaking up the great proportion of profit generated. But this unevenness combines too, through planetary networks, causing virtual money to affect material reality. As Nancy Fraser put it, the system-effect ripples out from the virtual to the real and back again:

> Affecting indebted peasants in the global South targeted for dispossession by corporate land grabs, workers in the global North forced to supplement low wages with consumer debt, and citizens everywhere subjected to austerity by states that are compelled in turn to act in the interest of investors by global financial institutions and bond markets...[37]

The Global Financial Crisis (GFC) was triggered in 2008 by a collapse in the sub-prime housing market in the US. Many thousands of risky loans were made in the previous decade to a large stratum of the low-waged working class. These were re-packaged into financial instruments that were sold back into a global finance sector, there to circulate within connected exchanges and banks. These loans defaulted suddenly, and in waves. The financial system only just survived the effects. Less fortunate were the millions of people in the global South and North who lost homes, jobs and communities. They continue to be victims through various government austerity programs and cutbacks since 2008, and in their sufferings are but the latest consequence of outward globalisation. They enter the ranks of de-industrialised workers that began to form in the 1970s and keep growing today wherever new technology is able to automate or outsource their skills and livelihoods to somewhere else. These are the discarded human material of outward globalisation, numbering millions, principally in the Anglosphere, in the migrant communities of France, and in the youth demographics of Mediterranean Europe. They may be superfluous to the needs of classic globalisation, but they have a function within global–local digitality as expressions of networked culture and politics that undermine, or at least make problematic, the organising principles of modernity's (and the West's) traditions of liberal democracy.

Inward Globalisation

Much inward globalisation may be seen as unconventional as it represents a new form of accumulation through a new dimension of space: virtual space. I differentiate this globalisation from the material, physical process just discussed, because the virtual is above all an individuated and subjective space, a psychological space whose new reality we accept as if it were real: a 'magic' space we little understand or interrogate phenomenologically. Its 'existence' as reality tells us something about what Noel Castree called Harvey's 'geographical imagination', and the consequences of what must frankly be described as a failure of imagination in his historical-geographical materialism.

After 1989, the Soviet Union and the ex-Warsaw Pact economies quickly embraced the global market, making it possible for capital to have fresh destinations for investment and accumulation. China opened up shortly after Tiananmen Square, and that country would, by 2018, be the biggest host for Western foreign direct investment (FDI).[38] But China presents a different economic case to other destinations for FDI. It does so in two ways: first, the country is run by the Communist Party, and Western investment—and the terms of that investment—are strictly regulated. Moreover, a widespread culture of corruption makes for an investment climate in China that is fraught, far from straightforward, and always uncertain in terms of the political climate and how investment will fare over the mid- to longer term. This in itself is not unique,

but the central point, and what makes China different, is that as the Chinese economy itself has grown, and grown to become the second largest economy, by GDP, in the world, then *its own* domestic accumulation has been compelled to join global circuits of capital in the relentless search for new opportunities in always decreasing physical space.[39]

In Harvey's logic, and in the context of subsequent post-1989 political and economic developments, it is reasonable to argue that a global and definitive crisis of accumulation should have occurred by now. That is to say, capitalism could have been expected to run critically short of the classical ways to make a profit, and serious cracks in the system would begin to show. The question is destined to remain a counterfactual one because of something that presents a significant problem for a materialist-based geographical imagination: virtual space emerged as an unanticipated space, a potentially unlimited space, not only for overaccumulated capital to enter, but also as the generator of vast new sources of accumulation. This is inward globalisation. This is the expansion of capital into the space of networked communication. Inward globalisation is also a colonisation of the existing spaces of society, into those realms, cognitive, material, cultural, where the cash-nexus of accumulation did not use to dwell but now can enter, impelled by the logic of market neoliberalism and empowered by digital technology. What this development means is that in the context of Harvey's spatialised thesis, there is no longer any notional or actual limit to capital in the way that he imagined it, and neither is there any notional or actual limit to the commodification of that networked space—or of the individuals who spend their lives within it.

The fact that virtual space has become a major, if not dominant, space for accumulation was illustrated by two events in 2018. First is that in early August, Apple became the first corporation to have a stock market valuation of one trillion dollars. Part of its success was that it has sold over one billion iPhones since its launch in 2007, which is approximately three phones every second for eleven years. Second is that in the same month Jeff Bezos, founder of Amazon, became the world's richest man, with a net worth estimated at $156 billion, equivalent to around $20 for every person on Earth. Neither event would have been possible without the internet, and both in their different ways are major expressions of what the internet is and what it does. They create virtual space and monetise it. And they—alongside others such as Google, Facebook, Netflix and so on—are instrumental in the creation of what Mark Andrejevic calls the 'digital enclosure'. This is an 'interactive virtual space' (between user and business) in which user activity becomes 'encompassed by the monitoring embrace' of the business.[40] Andrejevic speaks mainly of the dynamics of surveillance, but it is a surveillance capacity that expresses a power relationship that is oriented around the monetisation of user activity. In this sense, virtual space is another way of seeing how Winseck's concept of 'direct commodification'[41] is actually created and expanded.

Andrejevic's metaphor of 'enclosure' is a useful way to think about virtual space, but it is also misleading in an important sense. He draws his metaphor

from the Enclosure Movement in seventeenth- and eighteenth-century Britain, where large tracts of common land were privatised through the Enclosure Acts and given over to landlord–industrialists. The land of the commons was required for manufacturing capitalism; to transform it into sheep pasturage to provision the textile factories of the industrial revolution. In what became known as the 'Highland Clearances', enclosure not only privatised much of the ancient crofting farmland of the north of Scotland, but also expelled the people from that land.[42] Millions of acres of common fields and common land passed into private holdings and their peoples were evicted and scattered to the new factories of the British industrial cities, or further to North America and Australia.[43] This was what Marx called 'primitive accumulation' and the 'genesis of the industrial capitalist'.[44]

Virtual space may also be seen as a space of 'primitive accumulation' in that it secures and privatises the means of a new kind of production. However, Andrejevic's enclosure metaphor breaks down beyond this point. As just noted, people were expelled through commons enclosures; driven away to become wage-labour in the mills and factories, or to disappear through migration and transportation, never to be seen again. Virtual space, by contrast, was *created* as an enclosure, created as a privatised virtual space whose primary function was to be a space of accumulation. In this case, privatised space *needs people to come to it* and to stay for as long as possible. It's an important distinction. The internet was never a 'commons' with a distinct pre-history and culture. A Creative Commons has existed since 2001 as a non-profit web-based organisation set up to promote a user-collaborative approach to the web through tools and applications that are shareable, able to be built upon, and so forth. Ostensibly this is about collaboration, democracy, software-sharing and internet freedom. But Creative Commons depends upon a substantial capital grant from computer-maker Hewlett-Packard. Tied to this corporate leash, Creative Commons, if not compromised, seems destined to remain at the margins of web life, which is presumably where the tech companies would like it to be. By funding it, Silicon Valley appears to promote diversity. Moreover, Creative Commons is itself a child of digitality and is therefore unlikely to reflect too critically upon digital logic or upon the deeper philosophical meanings of digital technology *per se*. Still, Andrejevic, Creative Commons, and many like them seek, in Andrejevic's words, 'to rehabilitate rather than write off the democratic potential of interactive media'.[45] Note the term 'rehabilitate'. It means to 'restore' or 'bring back to a former state'. But there is nothing in virtual space to apply these terms to. From its inception, the overwhelming space of the web was oriented towards the objective of production for exchange—what Vincent Mosco, as long ago as the momentous year 1989, called 'cybernetic commodities'.[46] Any 'democratic potential' in the web was mainly at the level of rhetoric, with the real potential always being about business.

And note the term 'interactivity'. It is here that we can see the concrete expression of the business imperative at the heart of the web. Around 2004, so-called

'Web 2.0' became a brandable synonym for user-business interactivity. It is no exaggeration to say that the Web 2.0 discourse is what 'saved' the web from what threatened to be a niche/specialist obscurity after the 2000 dot.com crash. In the lead-up to the crash, a decade of hyperbolic promises had fuelled a bubble in NASDAQ stocks. From at least the time of Apple's '1984' ad, computing had entered public consciousness as the epitome of business efficiency and individual productivity. Computers and the emerging internet were proclaimed and often seen as the solution to almost any problem: from education to civil society, and from Bill Gates's 'friction free capitalism' to new forms of democracy and community building.[47] But the 1990s internet failed to deliver on any of these. Partly this was because the user base and technical infrastructure were not developed enough, and partly because the user base was not *interactive enough* with the owners of the internet—the corporations who had been busily creating the digital enclosure for over a decade.[48]

Web 2.0 was Silicon Valley's response to the mortal threat that the dot.com crash represented to digital capitalism. The Valley's Californian Ideology was tested by the loss of so much investment capital and the loss of face for so many of its tech-visionaries. However, now came a talented entrepreneur with an understanding of the power of language, especially metaphor in branding: Tim O'Reilly, a student of, and participant in, the Californian counterculture of the 1970s. O'Reilly is credited with coining and copyrighting the 'Web 2.0' brand. Of the power of metaphor, he wrote: 'A metaphor is just that: a way of framing the issues such that people can see something they might otherwise miss…'[49] Web 2.0 was to point out to people what they had missed in the previous iteration of the web: and that was that the web had to be profitable before any thoughts of making people free. O'Reilly blogged openly about it at the time, advertising a 2004 'Web 2.0 Summit' in San Francisco, proclaiming that: 'Web 2.0 is our first "executive conference"—a conference aimed at business people, with the focus on the big picture.'[50] He put it more bluntly a year later on his website:

> Web 2.0 is the business revolution in the computer industry caused by the move to the Internet as a platform, and an attempt to understand the rules for success on that new platform.[51]

The Silicon Valley big picture and rule for success was interactivity, or in a more democratic-sounding register, the 'participation' of the user with the platform, the browser or the app. And it worked. Through a new ideological offensive and with the collaboration of the more far-sighted tech corporations who survived the crash, the people came and they interacted. This was not primarily with each other as had been the case in the old days of Bulletin Boards and free Hotmail accounts, but with businesses such as Amazon who saw that the user was not just a customer, but also a source of information that could be harvested and aggregated and monetised in new and ever more integrated

ways. Although described by O'Reilly as a 'new architecture for participation', Web 2.0 did not involve any radical technical innovation.[52] As Evgeny Morozov describes it, the rise of Web 2.0 was instead the effect of an 'conceptual imperialism'[53] by Silicon Valley and its free market doctrinaires. It was done largely in order to change ideas around dangerously profit-free concepts such as open source software and 'virtual communities' and the 'digital citizen'. For business, it was an overdue reboot along proper business lines about what software did and what it facilitated vis-à-vis the user and the web.

Web 2.0 interactivity is the instantiation of inward globalisation. It is a step-change in attitude on the part of business, and shortly thereafter on the part of users who would in the main accept the web as efficient and convenient and as a form of progress. At root it was a Silicon Valley-inspired libertarian attitude that would soon spread around the world. We see it contained in the libertarian philosophy of Apple's Steve Jobs, who, in words reminiscent of Tim O'Reilly's quote above, expresses not only the core Valley belief of what constitutes 'interactivity' or 'participation' but also its attitude towards people: 'A lot of times, people don't know what they want until you show it to them. That doesn't mean we don't listen to customers, but it's hard for them to tell you what they want when they've never seen anything remotely like it.'[54] As twenty-first-century digital life began to encompass more than a free Hotmail account and Google browser, it began to change user attitudes. It did so in a way that would permit Facebook, for example, to explode as a means of human communication, and to give the term 'social media' meanings far beyond what anyone thought in 2004 when Mark Zuckerberg launched his application. This kind of interactivity has brought 'social' and digital 'media' into a now almost synchronous communion with the cash-nexus, or monetisation. In other words, the logic of accumulation has been freighted from 'media' into 'social' in ways and to an extent undreamed of prior to the Web 2.0 reboot.

Beyond accumulation through labour and the harvesting of user data, the main vector for digital accumulation is advertising. The statement is almost banal, but it is an underappreciated fact. Digitality's business model is largely dependent upon advertising, and it is fairly well-known that algorithmic tracking by Google, Facebook, Uber, Amazon, etc. is the means through which technology corporations keep 'interactivity' going—on their terms. However, the effects of the 'soaking'[55] of social life with advertising, as the practical application of the algorithmic business model, are much less understood or reflected upon.

Web 2.0-powered digitality has created a new relationship between advertising and the consumer. Through its capacity to make the process of signification infinitely penetrable, flexible and mutable, what Baudrillard termed the 'communicative function' of the 'commodity sign' in capitalism has become a potent force for accumulation. Digitality creates the virtual spaces in which people think, work, relax, produce, consume and communicate with others. It creates an 'atmosphere' of capitalism. The advertising that accompanies the user through much of web life inserts and circulates more than commercial

signifiers among an exposed and largely receptive public. These signifiers are also enmeshed within a whole continuous web of social discourse (narratives) that have embedded the promotion of commodities into the very centre of late capitalist culture. This has the effect of marketising social intercourse generally and making 'promotion' the 'cultural condition' of our time. Drawing from the semiotic works of Baudrillard, Franco Berardi sees this development as the arrival of 'semio-capitalism', a 'capitalism founded on immaterial labor and the explosion of the info-sphere.'[56] Semio-capitalism is perfectly suited to the web. Through it, time and space are digitally infiltrated by the commodity sign of promotion. Berardi again:

> Technological transformations have displaced the focus from the sphere of the production of material goods towards the sphere of semiotic goods: the info-sphere. With this, semio-capital becomes the general form of the economy. The accelerated creation of surplus value depends on the acceleration of the info-sphere. The digitalization of the info-sphere opens the road to this kind of acceleration.[57]

Contrast this with the commodity sign processes of analogue (print media) capitalism. Walter Ong wrote that the word in print media is fixed in time and space—on a page, a billboard, a shop window.[58] We can see it or not, engage with it or not, and it is a matter of chance whether the scattergun release of the print media advertising reaches us or not. Moreover, in print culture, the word is a semi-abstracted and semi-alienated 'thing' that one has to learn and consciously engage with if it is to fulfil its function of knowledge and literacy. Ong also noted that the sign 'releases [the] unheard-of potentials of the word'.[59] This is an important observation. The digitalising of the word and sign, and their insertion and circulation into the web life of the user, means that there is no way of not seeing, no way of not having to engage, if only to delete, and no way to avoid the algorithmic targeting of advertisements through profiles compiled from user history. Literacy with the digital sign, unlike literacy with the printed word, is a form of non-literacy, or illiteracy—in that whereas literacy connotes a form of control over the sign, this is something that digitality does not offer. There is little or no control over the commodity sign within semio-capitalism. It bombards and envelops us. And like the fish in water, we don't know we are wet. There is a learned acceptance of what appears, to unassuming 'digital natives' at least, as the natural state of advertisements at every turn. And this digitally created non-recognition, or non-realisation, is an aspect of our alienation, of our 'relation of relationlessness' with sign and word through digitality. As Berardi puts it, the advertising component of digitality is 'the anthropologically constitutive – and hence insuperable – character of alienation.'[60]

In this context it should be no surprise that we are able to create, and view as relatively unproblematic, a social world where not only are there diminishing spheres that the commodity principle cannot reach, but also that there is

nothing that is not at least in theory vulnerable to commodification. Michael Sandel mused on 'moral limits of the market' in his 2012 book, *What Money Can't Buy*, with a bullet-point list of what it now will. A random selection:

- *A prison cell upgrade: $82 per night*. In Santa Ana, California, and some other cities, nonviolent offenders can pay for better accommodations—a clean, quiet jail cell, away from the cells for nonpaying prisoners …
- *Rent out space on your forehead (or elsewhere on your body) to display commercial advertising: $777*. Air New Zealand hired thirty people to shave their heads and wear temporary tattoos with the slogan "Need a change? Head down to New Zealand."
- *If you are a second grader in an underachieving Dallas school, read a book: $2.* To encourage reading, the schools pay kids for each book they read.[61]

Mutated accumulation has transformed the capitalism of old. It is now a changed organism with an adapted fitness for a new environment. Through digitality, capitalism has the power to colonise the outward and inward physical realms of the world in ways that were impossible under analogue capitalism. And virtual space is an infinite space of accumulation through which capitalism is able to create a space more closely reflecting its logic and needs in ways that a generation ago would have seemed like science fiction. To finish this part, I will consider how the uneven and combined outward–inward–virtual dynamic has re-shaped capitalism's formal and commodity-producing expressions through service, manufacturing and platform capitalism. I will then consider how digital accumulation turns upon its head the logic that David Harvey terms 'accumulation by dispossession'—a classical form of accumulation that we find in the writings of Marx, and also in the metaphor of the 'digital enclosure' put forward by Andrejevic to argue that the classical form had continued into the digital context. What operates now, I suggest, is *dispossession by accumulation*, a far-reaching effect of the mutation of accumulation that renders more problematic than before the exploitative logic of capitalism.

Service, Manufacturing and Platform Capitalism as Regimes of Uneven and Combined Digital Accumulation

Digitality functions and dominates by way of three unevenly-spread articulations of the accumulation logic: service, manufacturing and platform. The first two are digitalised mutations of earlier iterations, and the last is wholly new. However, they all combine through a digital logic that motivates and activates accumulation on an integrating global-networked scale. Service, manufacturing and platform capitalism are networked but are not, of course, completely automated. They are peopled by the workers of the world who function simultaneously as producers and consumers. They more-or-less[62]

suffer the appropriation of their material or immaterial labour *as* producers and consumers—and they experience this appropriation to a greater-or-lesser degree, depending upon the sector they work in and the objective political conditions in the country and economy that is 'their' part of the global digital economy. All, again, more-or-less, inhabit digital–political spaces that are either actively neoliberal or passively market-dependent. This affects how an otherwise generalised and combined process of expropriation occurs in the lives of people where they live. And it produces kaleidoscopic post-modern articulations. So, for example, a manufacturing worker—say, a Foxconn worker making iPhones on a Zhengzhou production line—would have more in common with a platform worker—say a Deliveroo rider in London—by way of levels of exploitation, than each would with a salaried insurance (service) worker with Dai-Ichi Life in Tokyo, or a skilled manufacturing worker in a Boeing hangar in Everett, Washington.

Service capitalism now dominates the Western model of accumulation. Always a large component, it burgeoned to primacy as a restructuring effect of the de-industrialisation process of the 1980s and 1990s. During this period, much manufacturing capacity either vaporised due to exposure to globalised competition or was relocated to zones in Asia or Central or South America. And, like capitalism more broadly, the services sector has become subject to flexibilisation. This has meant adaptation to a more customer-centred environment. There are echoes here of the Web 2.0 strategy discussed earlier, in which the value of 'closeness' with the customer is set at a premium. In the context of the peopled service economy, this evolved into the so-called 'service-product continuum' whereby the consumer *engages* with a service that can be a product, and a product that can also be a service, with either able to be furnished online or offline. It is a business logic that permeates the vast service sector in the advanced economies in health, education, distribution, retail and so on. The establishment (by the business) of a 'relationship' between business and customer is the strategic objective of the service-product continuum, with the chief purpose being the extraction of on-going value from the connection. For example, the purchase of a product such as a holiday, a smartphone, a bunch of flowers, or almost anything, will likely be accompanied by a continuing service connection in the form of loyalty discounts, product upgrades, customer advice services, insurance, warranty options, etc., all designed to bring the customer closer to the business and to insert, as much as possible, a durable and continuing cash-nexus into the relationship. Digitalisation automates and empowers the process and makes more intimate, in a Web 2.0 way, the relationship that the service economy seeks to establish. Moreover, being subject to digitalisation and the forms of expropriation that it brings, the 'relationship' is, by its very nature, instrumental. This is a useful point to consider. From the business perspective, the logic of instrumentalisation would suggest that services should be increasingly digitalised and automated, and spread to wherever possible in order

to save transaction costs and to extract more value. But from the customer perspective, there appear to be limits, at least as far as the service sector goes. The intrinsic value of the person-to-person relationship, be it face-to-face in a physical store or online through a 'customer chat' service, is still considered important by many customers. What this means is that attempts to force through the automation principle through chat bots, through spam mail, or through automated check-outs in stores, check-ins at airports, cashless transactions at point-of-sale, etc., tend to generate customer dissatisfaction and thus far have tended to signal potential lines of resistance to untrammelled automation of the vast service sector.[63] Having said that, the planned implementation of driverless cars and trucks and trains and even aeroplanes, to name just a few of the major service sector industries, indicates that there is no let-up in the automation and roboticisation logic. Nonetheless, service capitalism soaks up the labour of the majority of the working populations of the developed economies and is also a highly digitalised sector that uses the facilitating power of the network to bring worker and customer together within the virtual context of atmospheric or active-direct commodification.

In 2010 China displaced the US as the centre of world manufacturing capacity.[64] This fact is indicative of the classical outward globalisation movement discussed above, but the bigger picture is complex and shifting. Manufacturing evolves and takes differing forms—from electronics to automobiles, and from consumer goods such as fridges to capital goods such as machine and robot manufacture. And the political picture is multifaceted, too. Some countries, such as Germany, are relatively protective of their manufacturing sector.[65] Others, such as the US under the Trump administration, seek a return to a mythical 'golden age' state of strength and vigour based upon that sector. But just-in-time flexibilisation, as with the services sector, has had a generally uniform effect upon manufacturing in terms of the neoliberalisation of its relations of production. Once the leading sector of skilled, secure and rising wages in the developed economies during the post-war 'golden age', manufacturing has undergone a transmutation to become a globalised sector connected by supply chains of pervasive just-in-time processes rationalised through the ideology of 'efficiency' that translates into on-going strategies to automate and/or implement increasing worker flexibility wherever possible. In the space of a couple of decades, manufacturing in the West has become a very different occupation in a very different society. Over roughly the same period, manufacturing arrived in the export processing zones of China, Mexico and elsewhere as a newly-minted neoliberal form, of which its newly-minted manufacturing workers would have had little or no experience. Nor would they have the historically-learned capacity to be able to resist its demands. Using Trotsky's formulation, we can see that such FDI-led manufacturing was able to 'skip' phases of social-political development in many countries that may otherwise have fostered worker class consciousness and the organisations that would reflect it. Moreover, where such organisation tries to emerge, in countries such as China, it was

and continues to be repressed, or else simmers in ongoing conflict between workers and management.[66]

These combined articulations of globalised manufacturing under the neoliberal relations of production were, at least in hindsight, predictable. Once more, this is capitalism doing what capitalism does. Also inevitable in the neoliberalisation and globalisation of the manufacturing sector is a three-decades long stagnancy in working class wages, and not just in the manufacturing sector, but across all economic spheres. The US is seen as the lead indicator here. In 2015 the Economic Policy Institute (EPI) estimated that 'The U.S. middle class had $17,867 less income in 2007 because of the growth of inequality since 1979'.[67] Another EPI Report from 2018 made the same point from a different angle when it noted that : 'A full-time minimum wage worker in 1968 would have earned $20,600 a year (in 2017 dollars) [whereas] a worker paid the federal minimum wage would have only earned $15,080 working full time in 2017.'[68] Moreover, general accumulation for capital is boosted further if it is considered that outsourced and new investment manufacturing capacity in the NICs is predicated upon wage-rates that are even lower. And there is a further business dividend with increases in worker productivity though both labour flexibility and automation—and not just in the US, but wherever manufacturing takes place.[69]

The spectre of automation, as a total solution, looms over manufacturing much more than it does over services. So pervasive and so transformative is the potential effect for capitalism as a whole, that it is difficult to find settled opinion in economic-pundit and investment circles on what it means in terms of jobs lost (and created) due to the excising of the human component in production through automation. This is in the nature of digitality. Moreover, capitalism's transformed relationship with time and space means that predictions of social-economic effects over even five years into the future are fraught. McKinsey Global Institute (MGI), for example, the consultancy firm that advises businesses on investment strategies, published a report in 2017 which found that:

> …half the activities people are paid to do globally could theoretically be automated using currently demonstrated technologies. Very few occupations—less than 5 percent—consist of activities that can be fully automated. However, in about 60 percent of occupations, at least one-third of the constituent activities could be automated, implying substantial workplace transformations and changes for all workers.[70]

The report then goes on to ideologise this fairly neutral phraseology with the kind of confirmation bias that businesses like to hear:

> The relative cost of automation can be modest compared with the value it can create. The types and sizes of investment needed to automate will differ by industry and sector. For example, industries with high capital

> intensity that require substantial hardware solutions to automate and are subject to heavy safety regulation will likely see longer lags between the time of investment and the benefits than sectors where automation will be mostly software based and less capital-intensive. For the former, this will mean a longer journey to breakeven on automation investment. However, our analysis suggests that the business case can be compelling regardless of the degree of capital intensity.[71]

As to effects upon employment, the report adopts a neutral tone again:

> People will need to continue working alongside machines to produce the growth in per capita GDP to which countries around the world aspire. Our productivity estimates assume that people displaced by automation will find other employment.[72]

McKinsey's research is typical of the general trend. Basing their conclusions on little more than recent industrial and economic indicators, and filtering them through a neoliberal discourse that equates new technology, especially automation, with productivity and profitability, economists and consultancies thus prod businesses forward to automate or die. Any secondary externalities, such as job losses, are given short shrift, as in the comment just cited, or are assumed to somehow work themselves out. And so, reading the signals and hearing the discourse, businesses naturally look towards automation as the solution and therefore automate. Aggregated numbers are difficult to find, but the International Federation of Robotics (IFR) estimates that the growth of industrial robots, the kind that are installed in automobile, electronics and white goods assembly lines, has averaged 15% per year over 2006–16, and that 254,000 new machines were installed in 2016. Forward trends suggest that there will be 400,000 installed in 2019—a number not so far short of the current combined US workforce of analogue-age behemoths General Motors (180,000) and General Electric (313,000).[73]

The largest corporation in the world in terms of number of employees is Foxconn, the Chinese-owned maker of electronics, computer chips, and notably the iPhone. Foxconn's 2017 annual report gives the number of its employees as 803,126.[74] Chairman Terry Gou sees his vast workforce as too large for an industry that is the archetype for automation suitability, and was quoted in 2018 as saying, 'If we can't change, we'll be left behind'.[75] However, Foxconn has been at the forefront of automation for some years. In 2016 the BBC reported that it had already 'replaced 60,000 factory workers with robots.'[76] The company is pushing as fast as it can to fulfil its strategic objective to automate as much as of its workforce as possible, with the Chairman seeking to install one million robots in Foxconn factories by 2020, a feat that would make redundant much, if not most, of its current human capital.[77] Whether it will achieve this is a moot point, and earlier targets for automation were not reached. But failure

was not due to lack of will by the company, or to resistance from the Chinese government or worker agitation, but to the simple logistics of finding the right robot for the job. And so Foxconn's quest continues, with the corporation raising four billion dollars in 2018 to fund its next round of automation. We can see that predicting the general direction for the future is a fairly safe bet as far as Foxconn are concerned. And automation will be the future for manufacturing more broadly as the Foxconn's chairman's fear of being 'left behind' asserts itself as the default psychology of the sector.

McKinsey tell us in the quote above that 'in about 60 percent of occupations, at least one-third of [their] constituent activities could be automated'. This indicates that it's not only the low-waged and low-skilled whose working future is under the shadow of the robot, but the high-waged and high-skilled too. The future is here already. Bots now write copy for publications such as Forbes.com and the *Washington Post* (owned by Amazon) where writing, once the task of the journalist in areas such as sports reporting, company earnings statements, weather reports and so on are now routinely generated automatically by an algorithm.[78] And in high schools, universities and in MOOC courses, the automation of many academic tasks such as marking, lectures (through on-demand video) and librarianship (via digital libraries) has been underway for some years. And on YouTube you can watch a robot suturing a grape with all the skill and tenderness of a practiced surgeon.

When they sounded the alarm about the employment dangers of automation, Norbert Wiener and Jacques Ellul could probably have fairly accurately imagined an increasingly automated manufacturing sector such I have just described. Moreover, Wiener was more forthright than the ethics-free McKinsey report. In his 1954 work *Human Use of Human Beings*, he inserted a warning:

> Let us remember that the automatic machine, whatever we think of any feelings it may have or may not have, is the precise economic equivalent of slave labor. Any labor which competes with slave labor must accept the economic conditions of slave labor. It is perfectly clear that this will produce an unemployment situation, in comparison with which the present recession and even the depression of the thirties will seem a pleasant joke.[79]

In the 1950s it would have been difficult for anyone to imagine something like the platform economy. Platform capitalism combines the crudest as well as the most sophisticated forms of human exploitation and accumulation to date. Its app-based logic is able to encompass registers of life that heretofore were outside the scope of where the market could penetrate. Platform capitalism aids new possibilities for exploitation, accumulation and rentierism[80] in wholly new spheres, and so constitutes the leading technological edge of inward globalisation. Platform capitalism is able to draw broad swathes of society into its logic. This includes the unemployed and the under-employed who are transformed

thereby into a precariat dependent upon the app and the contract weighted in favour of the intermediary. I touched on the current manifestations of platform capitalism at the beginning of this book. This was in reference to a report by the Data and Society Institute and its research on the 'algorithmic management' of a highly flexible labour force, and what I referred to as 'automated exploitation'. Here I will look at its cruder, as well as its more sophisticated, aspects in some more detail. In combination, these attributes form the parameters of a new kind of capitalism, a 'new business model'[81] as Nick Srnicek calls it, in that they not only extend the frontiers of accumulation, but also reorient legacy forms of accumulation such as service and manufacturing ever more closely toward the hyper-flexibility and profitability of the platform model. Through platform capitalism, in other words, the mutation of accumulation spreads throughout the whole domain of accumulation in uneven but combined ways.

Platform capitalism is crude in that it disrupts legacy forms of accumulation with rapidly-developed and implemented automaticity that—through the app ecology—leaves existing businesses, legislators and workers little time to reflect on and react to the new facts on the ground. This is the Silicon Valley model, of course, and has its mantra in Mark Zuckerberg's boast that successful businesses such as his have to 'move fast and break things'. We see this in early platform capitalism's ride-sharing company Uber, a company that is claimed to engage in 'regulatory arbitrage', using loopholes in local laws concerning business practices that are ruthlessly exploited through the new capabilities of digital technology.[82] Uber is able to establish a physical–virtual presence by acting as the intermediary between driver and passenger, using its app to dramatically lower the cost of transaction. This is achieved largely through the exploitation of the driver, and by being able to control production inputs, such as vehicle, fuel and maintenance, by loading them on to the driver, and so not having to acquire property rights over those inputs.

The crudity of moving fast to break existing industrial paradigms can perhaps be better illuminated through the use of a metaphor. The platform intermediary may be seen as a hammer shattering a windscreen. The windscreen does not collapse upon impact but turns opaque and is held together by the millions of tiny cracks and fissures themselves. The weak, fragile and fissured windscreen is the platform model, but it stands also for a large part of digital society more broadly. The spaces of its cracks are colonised by networks that insert themselves between the shattered fragments, connecting the fragments yet keeping them apart. Workers are those fragments, isolated from each other yet forming a shattered totality, something whole but broken, something on the brink of collapse, and something unable to be put back together because the impact of the hammer causes an irreversible metamorphosis in the structure as a whole. The social disaster of fragmentation, however, is obscured by the ideology of the hammer-wielder that sees fragmented labour as 'free' labour, individual peer-to-peer actors with 'choice', or as independent contractors who enter freely into an agreement. Indeed, some platform workers even

see themselves as 'entrepreneurs', thereby exhibiting a kind of digital Stockholm syndrome that leads many, no matter how poor and powerless, to identify with a Travis Kalanick, an Elon Musk, or a Peter Thiel.[83]

Platform capitalism is sophisticated in that it is able to draw upon the skills, knowledge and entrepreneurship of a present-day computing culture that is descended from the US military-industrial complex of the 1950s. Today, however, it is a *globalised* culture that has the added ideological advantages of neoliberalism, libertarianism, and a worldwide pool of talent to supercharge this essentially science-based endeavour underpinning accumulation. The US still has many economic and technology-infrastructural advantages: it is the largest economy in the world; it has the deepest concentration of computer R&D in the world; it has some of the largest (and most highly computer-sophisticated) military contractors in the world; and it has some of the biggest, and most largely computer-dependent, financial services in the world with which to fund this activity. However, as the political scientist Daniel Abebe puts it: 'no country's infrastructure is more dependent on computer systems, and thus more vulnerable to attack, than that of the United States'.[84] Accordingly, the US devotes more resources than any other country—more than Russia and China—to R&D to strengthen its cyberwarfare defensive and countermeasure capacities. Digitality thus has the force of a central strategic imperative of the world's most powerful military and economy underpinning it.[85]

Computer R&D evolves in large part through specific political–military considerations—in the US and elsewhere. This has the inevitable effect of ratcheting up the need for ever-more powerful computers and sophisticated applications. And the tech companies are part of this. This may be as a partner in clandestine cyberwarfare in the often-opaque relations[86] that the biggest tech companies preserve with governments; or this may be as victims of hackers stealing their commercial secrets; or as the target of malware attacks for commercial or ideological reasons. Defensive measures, for tech companies and governments, drive the constant need for more sophistication, more computing power. And, as noted, the military–industrial complex is no longer the US-centric culture or discourse that evolved solely to develop computing power to defeat the Cold War enemy. It is now a global culture that sees computing, technical expertise, entrepreneurship, greed, jealousy, fear, paranoia and hubris swirl and interpenetrate between many governmental and private sector entities. This instrumental culture of computation is enhanced by well-established connections in the university system—again not just in the US, but across the major developed economies. For example, university-derived psychological insight into computer-user experience has applications in advertising as much as it does in adopting countermeasures against Islamic jihadists. The lure of government research funding means that many university disciplines will seek to adapt their specialisms to computational 'solutions' to any number of applications. Semiotics, critical thinking, political science, political communication, journalism, media and communications and cultural studies are just some of

the disciplines through which the logic of the digital is now filtered and directed towards economy and society—and then employed in the service of ever more sophisticated means of accumulation.

It is clear that digitality suffuses economy and society from top to bottom: from the traditional sectors of services and manufacturing to the wholly networked sector of the platform. Accumulation is still the original and continuing objective for capitalism. But this is an accumulation logic that has mutated and displays new fitnesses and capacities. This realisation takes us back to the question posed at the beginning of this section: exactly what kind of accumulation is this?

In *The New Imperialism*, David Harvey brought his brand of historical-geographical materialism to bear upon the 'territorial logic' of global capital as it acts in the twenty-first century, with the US being the leading exemplar.[87] Harvey characterises this new logic as 'accumulation by dispossession', and devotes a good deal of his book describing how this unfolds in time and over space. In many ways, as Harvey sees it, accumulation by dispossession is the continuation of the classical process of Marx's 'primitive accumulation' which involves, amongst other things, the removal of peasants from their lands to make way for factories and export processing zones in NICs such as Mexico, China and India; or it involves the destruction of jobs with relative impunity by businesses free to relocate to wherever the highest returns on investment can be made. But for Harvey the new imperialism also incorporates some 'cutting edge' aspects that give the accumulation process 'a wholly new mechanism'.[88] The first is privatisation. This is dispossession by sale of public assets such as water, power, public land, telecoms, government services, and so on. This functioned as the model for significant dispossession in the Anglophone capitalisms. It then grew to become neoliberalism's ideological standard across the world during the 1980s and 1990s.[89] Second was dispossession through the privatisation and marketisation of specific areas of knowledge where it pertains to the commons of bio-heritage, such as through the licensing of genetic materials and the sequencing of the human, animal and plant genomes for commercial purposes.[90] These are certainly 'new mechanisms'; however, they are simply *extensions* of the classical form. What Harvey describes is the *accumulation logic taking the lead*, through what Marx termed the 'antagonistic character of accumulation'.[91] This is capital acting as it has always done, since at least the time of the Industrial Revolution, actively seeking out new spaces for accumulation which have almost always included dispossession of some kind. It is *dispossession through traditional means*, be they ideological or ontological. To his credit, all this is well-documented in *The New Imperialism*, and Harvey accurately reflects the continuing travel of the classical accumulation mode as an aspect of contemporaneous globalisation. And his many readers would have learned much about how accumulation by dispossession, much like the logic underpinning the case of the Enclosure Movement in eighteenth-century Britain, continues today at the human scale and through those remaining material–analogue means.

But Harvey argues that his 'accumulation by dispossession' is the central 'feature of what contemporary capitalism is about'.[92] The use of the term 'contemporary capitalism' in 2005 is suggestive. In a book of political economy and the time–space compression, one would expect that such contemporary analysis would feature a major incorporation of the shaping effects of the networked economy and society.[93] However, it is peculiar that writing over a decade and a half after the publication of *Postmodernity* Harvey still has little or nothing to say about information technologies and their transformative effect upon capitalism and the world more broadly. His use of the term 'imperialism' in the title of the book as its analytical descriptor is also a reminder of his predilection for not going much beyond classical Marx for his theoretical cues. *The New Imperialism* mentions the 'internet' only twice, and in passing; 'communication' is written about in its generic sense; and the term 'digital' does not appear at all. The downgrading of the importance of information technology evidently persists, and so Harvey is able to tell only a part of the story of contemporary capital accumulation. Not only that, he omits the most important—and actually 'contemporary'—part.

Digitality has not only created a form of accumulation that may one day eclipse classical accumulation strategies as the dominant form, but it also *reverses* the classical logic, thus making it truly revolutionary. Under digitality, the accumulation logic does not precede the act of dispossession, but rather *the act of dispossession precedes accumulation*. Dispossession by accumulation functions as a form of dispossession that *has already occurred* through creation of virtual space itself. This is because virtual space is privatised space and was conceived of as such by the owners and controllers of the infrastructural technologies that make networked space possible. It was a commons (or a potential commons) only in the sanguine theories of early techno-utopians such as Howard Rheingold.[94] Dispossession comes first in the networked space, a space born as instrumental and oriented toward accumulation. Such dispossession comes with the potentials of sharing, of commonality, of democracy-building coded out of it, and with the atmospheric or active configurations of commodification coded in.

Coming 'pre-dispossessed' to the space of the network society means that users are already at a disadvantage vis-à-vis the digital sphere. Users come to the space not by 'free' choice, but for a range of more compelling reasons, such as the requirements of work or education, or peer-pressure, a 'fear-of-missing-out' factor that features in many a migration to social media.[95] When users enter the digital sphere, they perforce are dispossessed of the capacities of analogue technique; they are dispossessed through alienation from the analogue world and its analogue essence that they share; are dispossessed by their removal from the analogue human scale of the world; and are dispossessed of the analogue time and space that frames that world. The accumulation logic does not lead, as in the classical model, to the point where capital scours the planet for opportunities for accumulation. Digital accumulation is framed by an *atmosphere*, a logic

that resides inside the virtual space itself, ready and waiting for users who come to it. Consequently, the digital dispossessed will not feel the pangs of dispossession that a peasant farmer would feel as victim of a corporate land-grab, for example. Digital dispossession is of a different order, because digital accumulation represents a new form of capitalism. Digital accumulation is not, therefore, a new 'mechanism'—a telling label employed by Harvey—but a radical coercive force, where its movement and effect, its process and its continuity, to paraphrase Silvia Estévez, are an invisible and magical process of accumulation that we are yet to fully grasp or understand as users.[96]

I have striven to show that the digitalised economy is more than a computer-enhanced process of efficiency for the logic of accumulation, something equivalent to the introduction of the Fordist production line, or the containerisation of the shipping industry. Digitality has given accumulation a capacity and characteristic that is very different from the 'antagonistic' essence, as Marx called it, that was part of its Industrial Age DNA. Accumulation logic has mutated, and through the digital interface has upturned accumulation by dispossession into dispossession by accumulation. This is accumulation almost by stealth through means that obscure the dispossession and disguise the antagonism; accumulation in a context where dispossession has already occurred. Digital technology and digital networks have created an entirely new economic sector, platform capitalism, which represents accumulation at its most exploitative and alienating. Platform capitalism is the model for the future; its techniques are applied wherever possible in service and manufacturing, and digitality has transformed these sectors too. The mutation of accumulation is largely undertheorised and so has evolved largely unnoticed. Partly this is because the influential and Marxism-inspired left, such as Fraser, Harvey and Streeck, fatally weaken what are often penetrating analyses by ignoring the digital. And media theory, a discipline born only relatively recently and with a chip on its shoulder in respect of its intellectual legitimacy, has tended to be inward-looking and legitimacy-seeking, and tends to produce micro-epistemes of theory that achieve little beyond its immediate spheres. Again, much good work is stifled, this time by the lack of an overtly political dimension.

This is a problem, not simply for the left, be it Marxism-inspired or otherwise, but for the project of emancipation itself. An economy that alienates and exploits to the extent that a digitally-powered capitalism does, demands that to be able to resist it, we need first to be able to identify it and theorise it. Digitality is producing a qualitatively different economy, and so we must recognise it as such, and we must prioritise it as such. This means that we must think about political economy in a different way. A mutated form of accumulation that is seemingly non-antagonistic makes for a powerful mode of exploitation. And the double-alienation from analogue technique and the analogue world by digital logic makes recognition of this fact even more difficult. Gramsci's pessimism of the intellect can be a paralysing condition for theorists and for activists, causing them to turn to other fields such as identity politics or media

archaeology. To combat this proclivity we need to remember the ancient powers of reason and of logic when fused with politics. Raymond Williams understood that *more politics* could be the necessary intellectual palliative in the face of seemingly insuperable political problems. In his *Politics and Letters*, he responded to a long question about Dickens's novel *Hard Times* and its context of industrial society with the soul-restoring line:

> however dominant a social system may be, the very meaning of its domination involves a limitation or selection of the activities it covers, so that by definition it cannot exhaust all social experience, which therefore always potentially contains space for alternative acts and alternative intentions which are not yet articulated as a social institution or even project.[97]

The next section on culture and society both illuminates and complicates the problems of digitality. It is necessary to give particular focus to these domains, because the capitalist dynamic involves a relationship between social being and social activity, and consciousness. The current hegemony of digital as vector for globalisation inevitably impinges upon the non-static formations of culture, of politics, and of society more generally. Here there is much darkness, but also light, and so it is to these constituting features of our post-modern time–space that we must turn.

Notes

[1] Parisi, Luciana (2016) 'Instrumental Reason, Algorithmic Capitalism, and the Incomputable' in *Alleys of Your Mind: Augmented Intelligence and Its Traumas* edited by Matteo Pasquinelli. University of Lüneburg: meson press, p.125.

[2] Leon Trotsky (1930/2008) *The History of the Russian Revolution*. Chicago: Haymarket Books. Vol., p.910.

[3] See, for instance, Don Tapscott and Anthony D. Williams's (2013) *Radical Openness* (New York: TED Books). More recent is Klaus Schwab's (2018) *Shaping the Future of the Fourth Industrial Revolution*, (New York: Portfolio).

[4] David Harvey (1990) *The Condition of Postmodernity*. Oxford: Blackwell, p.240.

[5] Ibid.

[6] See p.222.

[7] Anthony Giddens (1984) *The Consequences of Modernity*. Stanford: Stanford University Press, p.64.

[8] Fredric Jameson (2003) 'The End of Temporality', *Critical Inquiry*, 29(4), 695–718.

[9] Ben Agger (2011) 'iTime: Labor and Life in a Smartphone Era', *Time & Society* 20 (2), 119–136.
[10] Ibid., p.121.
[11] Jacques Ellul (1964*) The Technological Society*. New York: Vintage,, p.135.
[12] Rahel Jaeggi (2014) *Alienation*. New York: Columbia University Press, p.1
[13] Trotsky, *The History of the Russian Revolution*.
[14] See Rudolf Hilferding (1981) *Finance Capital: A Study of the Latest Phase of Capitalist Development*, Morris Watnick and Sam Gordon (trans.), Tom Bottomore (ed.) London: Routledge & Kegan Paul, pp. 322–323.
[15] Leon Trotsky (2007) *The Permanent Revolution*. London: Resistance Books. For Trotsky, socialist revolutions could be successful in countries (such as Russia) that had not undergone a bourgeois revolution, only by the proletariat embarking upon a 'permanent' struggle whereby it carried though the bourgeois phase (of industrialisation) by itself—and also where it would make alliances with worker movements in other countries to avoid the indigenous revolution becoming isolated and deformed (such as happened in Russia in the 1930s).
[16] Leon Trotsky, *The History of the Russian Revolution*, p.5.
[17] David Harvey (1982/2007) *The Limits to Capital*. London: Verso, p.414.
[18] Robert Hassan (2001) Unpublished PhD Thesis, *Globalisation: The Space Economy of Late Capitalism*. University of Melbourne Library.
[19] Fredric Jameson (1996) 'Five Theses on Actually Existing Marxism', *Monthly Review* 47(11), April, p.9.
[20] David Harvey (2005) *The New Imperialism*. New York: Oxford University Press, p.147.
[21] Harvey, *The Condition of Postmodernity*, pp.185–186.
[22] Foreign Direct Investment was globally valued at 54 billion in 1980. Today it is at 1.8 trillion. See World Bank Group website: https://data.worldbank.org/topic/financial-sector
[23] Wang Jisi (1996) 'Civilisations: Clash or Fusion?' *Beijing Review*, January 15–21, pp.8–11.
[24] See Elizabeth Economy (2018) *The Third Revolution: Xi Xinping and the New Chinese State*. New York: Oxford University Press.
[25] Dibesh Anand (2011) *Hindu Nationalism in India and the Politics of Fear*. New York: Palgrave Macmillan.
[26] See Gary Rodan (2018) *Participation Without Democracy: Containing Conflict in Southeast Asia*. Ithaca: Cornell University Press.
[27] Jeffrey Nealon (2012) *Post-Postmodernism, or, the Cultural Logic of Just-in-Time Capitalism*. Stanford: Stanford University Press, p.174.
[28] Costas Lapavitsas (2013) 'The Financialization of Capitalism "Profiting without Producing"' *City*, 17(6), 792–805.
[29] Ibid. p.794.
[30] Laura Lotti (2018) 'Fundamentals of Algorithmic Markets: Liquidity, Contingency and the Incomputability of Exchange', *Philosophy of Technology* 31: 43–58, p.51.

[31] Ibid., p.52.
[32] Ibid.
[33] Ellen Ullman (2018) 'Franken-Algorithms: the deadly consequences of unpredictable code'. Interview in The *Guardian* 30th August. https://www.theguardian.com/technology/2018/aug/29/coding-algorithms-frankenalgos-program-danger
[34] Alexander Munk and Erhan Bayraktar (2017) 'The stock market has about 12 mini flash crashes a day — and we can't prevent them', *Marketwatch*, 31st July. https://www.marketwatch.com/story/the-stock-market-has-about-12-mini-flash-crashes-a-day-and-we-cant-prevent-them-2017-07-31
[35] Jamie Condliffe (2016) 'Algorithms Probably Caused a Flash Crash of the British Pound' *MIT Technology Review*, 7th October. https://www.technologyreview.com/s/602586/algorithms-probably-caused-a-flash-crash-of-the-british-pound/
[36] Nancy Fraser (2017) 'A New Form of Capitalism?' *New Left Review* 106, July-August, p.64.
[37] Ibid., pp. 64–65.
[38] See *World Investment Report* (2018) China is the largest host for FDI (after the United States) see p.4. https://unctad.org/en/PublicationsLibrary/wir2018_en.pdf
[39] Elizabeth Economy makes the point that 'In the third quarter of 2015, China's outbound investment surpassed its inbound investment for the first time'. See her *The Third Revolution*, p.112. Moreover, China's 'Belt and Road Initiative', whereby an estimated $400 billion in infrastructure and economic development in 152 countries (2019) not only provides political and economic leverage over these countries and regions (Europe, Asia, Middle East and Africa) but acts also as an essential outlet for its own domestic capital. See Lily Kuo and Niko Kommenda (2018) 'What is China's Belt and Road Initiative?' *The Guardian Online*, 30th July. https://www.theguardian.com/cities/ng-interactive/2018/jul/30/what-china-belt-road-initiative-silk-road-explainer
[40] Mark Andrejevic (2007) *iSpy: Surveillance and Power in the Interactive Era*. Lawrence, KS: University Press of Kansas, p.2.
[41] Dwayne Winseck (2011) 'The Political Economies of Media and the Transformation of the Global Media Industries' in *Political Economies of Media*, Dwayne Winseck and Dal Yong Jin (eds.) New York: Bloomsbury, p.23.
[42] Tom Devine (2018) *The Scottish Clearances: a History of the Dispossessed 1600 to 1900*. London: Allen Lane.
[43] Eric Hobsbawm (1996) *The Age of Revolution*. London: Weidenfeld & Nicholson, p.153.
[44] Karl Marx (1976) *Capital* Volume 1. Harmondsworth: Penguin, p.915.
[45] Mark Andrejevic (2007) *iSpy: surveillance and power in the Interactive era*, p.8.
[46] Vincent Mosco (1989) *The Pay-per Society: Computers and Communication in the Information Age: Essays in Critical Theory and Public Policy*. Westport: Praeger Publishers.

[47] For an example of the latter, see Howard Rheingold's (2000) *The Virtual Community*: *Homesteading on the Electronic Frontier*. Cambridge, Mass.: MIT Press.

[48] For an excellent analysis of the process of privatisation as it occurred, see Dan Schiller's (2000) *Digital Capitalism*. Cambridge, Mass: MIT Press

[49] Evgeny Morozov (2013) 'The Meme Hustler', *The Baffler*, April. https://thebaffler.com/salvos/the-meme-hustler

[50] Ibid.

[51] Tim O'Reilly (2005) 'What is Web 2.0? Design, Patterns and Business Models for the Next Generation of Software', *O'Reilly Network*, 30th September. http://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html

[52] Ibid.

[53] Morozov, 'The Meme Hustler'.

[54] Steve Jobs (2000) 'Apple's One-Dollar-a-Year Man' [Interview with *Fortune* magazine], *CNN Money*, 24th January. https://money.cnn.com/magazines/fortune/fortune_archive/2000/01/24/272277/

[55] Scott Harper (2017) Castlewood Productions. *You're Soaking in It.* A documentary that looks at the interaction between the semiotics of advertising through algorithmic networks.

[56] Franco Berardi (2008) *Precarious Rhapsody*: *Semiocapitalism and the Pathologies of the Post-Alpha Generation*. New York: Autonomedia, p.108.

[57] Ibid., p.44.

[58] Walter Ong (2002) *Orality and Literacy: the Technologizing of the Word*. London: Routledge.

[59] Ibid., p.73.

[60] Berardi, *Precarious Rhapsody,* p. 104.

[61] Michael Sandel (2012) *What Money Can't Buy*: *The Moral Limits of Markets*. London: Penguin, pp.3–5.

[62] The point is that vis-à-vis the relationship with digital capitalism, today almost everyone confronts it in some way. Some, such as precarious platform workers, are individuated and subjugated to a much greater degree than, say, service workers in the professions, such as in education or health. Platform workers and casualised service workers are generally unorganised or weakly organised as groups and must fight an individual or collective rearguard action against encroaching commercialisation, marketisation and automation of their labour.

[63] Anecdotally, this seems to be changing. Self-check-outs in supermarkets are becoming increasingly popular, especially with younger people. It is the same, to an even greater degree, with cashless purchasing. Card purchases for even small amounts of money are now simple and fast, and often processed without surcharge. Moreover, what Peter Thiel, founder of PayPal, called the 'flinch moment', a psychological stage where a customer who might think twice before handing over a thick wad of notes, is avoided now that she only has to touch a machine with a card for the transaction to be

completed in a second or two. We can see this as another dimension of alienation, where the connection via the analogue human at the check-out, or paper money in the wallet, disappears—and the individual loses another tangible feature of interacting with the world. On 'the flinch moment' see Jacques Peretti (2017) *The Deals that Made the World*. New York: Hodder & Stoughton, p. 177–178.

[64] Marc Levinson (2018) *U.S. Manufacturing in International Perspective*, Congressional Research Service. https://fas.org/sgp/crs/misc/R42135.pdf

[65] German manufacturing has successfully been able both to outsource much capacity to lower waged economies in Europe and Asia, notably China, and to continue to have a strong domestic exporting manufacturing sector, albeit with depressed wage levels. This is especially the case in electronics, with companies such as Siemens, and in car manufacturing through the big brands such as Volkswagen, Audi, Mercedes and BMW. On the relation between outsourcing and the wage levels of non-outsourced German manufacturing from the early 1990s until more recently, see Deborah Goldschmidt and Johannes Schmieder (2017) 'The Rise of Domestic Outsourcing and the Evolution of the German Wage Structure', *The Quarterly Journal of Economics*, 132(3), 1165–1217.

[66] See Jack Qiu (2016) *Goodbye iSlave: A Manifesto for Digital Abolition*. Urbana: University of Illinois Press.

[67] Lawrence Mishel, Elise Gould and Josh Bivens (2015) *Wage Stagnation in Nine Charts*, Economic Policy Institute, p.4. https://www.epi.org/files/2013/wage-stagnation-in-nine-charts.pdf.

[68] Cited in Dominic Rushe (2018) 'Critics fear Amazon's minimum wage hike will distract from its other issues', *The Observer* (London), 7th October: https://www.theguardian.com/us-news/2018/oct/06/critics-fear-amazons-minimum-wage-hike-will-distract-from-its-other-issues

[69] Ibid.

[70] McKinsey Global Institute (2017) 'Harnessing Automation for a Future that Works', p.6. https://www.mckinsey.com/featured-insights/digital-disruption/harnessing-automation-for-a-future-that-works

[71] Ibid., p.7

[72] Ibid., p.9

[73] International Federation of Robotics (IFR) (2016) *World Robotics Report*. https://ifr.org/news/world-robotics-report-2016

[74] See Hon Hai Precision Industry Co., Ltd: Annual Report (2017), p.91. https://www.foxconn.com/Files/annual_rpt_e/2018_annual_rpt_e.pdf

[75] Kensaku Ihara (2018) 'Foxconn plots $4bn automation push as labor costs bite', *Nikkei Asian Review* 24th February. https://asia.nikkei.com/Asia300/Foxconn-plots-4bn-automation-push-as-labor-costs-bite

[76] Jane Wakefield (2016) 'Foxconn replaces 60,000 factory workers with robots', BBC News. https://www.bbc.com/news/technology-36376966

[77] Ziyi Tang and Tripti Lahiri (2018) 'Here's how the plan to replace the humans who make iPhones with bots is going', Quartz, 22nd June. https://qz.com/1312079/iphone-maker-foxconn-is-churning-out-foxbots-to-replace-its-human-workers/

[78] See for example, Lucia Moses (2017) 'The Washington Post's robot reporter has published 850 articles in the past year', *Digiday*, 14th September. https://digiday.com/media/washington-posts-robot-reporter-published-500-articles-last-year/

[79] Norbert Wiener (1954) *The Human Use of Human Beings*. New York: Houghton Mifflin, p.162.

[80] The explosion in the popularity of Airbnb has interesting characteristics that show the extent of the colonisation process that reaches from the poorest person, whose only 'asset' is a spare room in New York, or Barcelona, to rent for a little extra money, to owners of second homes how who are able to make significant rentier income from the Airbnb platform. Both extremes, however, contribute to increasing replacing rental properties by the much more lucrative Airbnb short-term leases, taking previously longer-term leases off the market. Additionally, much of the activity is illegal. See David Wachsmuth, et al. (2018) *'The High Cost of Short-Term Rentals in New York City. A report from the Urban Politics and Governance research group School of Urban Planning McGill University.* https://mcgill.ca/newsroom/files/newsroom/channels/attach/airbnb-report.pdf

[81] Nick Srnicek (2017) *Platform Capitalism*. Cambridge: Polity.

[82] Julia Tomassetti (2016) 'Does Uber Redefine the Firm? The Postindustrial Corporation and Advanced Information Technology', *Indiana Legal Studies Research Paper No. 345.*

[83] Alex Rosenblat (2018) *Uberland: How Algorithms Are Rewriting the Rules of Work*. Oakland: University of California Press, p.85.

[84] Daniel Abebe (2016) 'Cyberwar, International Politics, and Institutional Design', *The University of Chicago Law Review* 83(1), 1–22, p.19.

[85] Ibid., p.16. Abebe makes the point that the US and China have much larger budgets than Russia, but Russia's legacy in computer science research from the USSR means that 'its (Russia's) technological sophistication might make up for its shortfall in resources' (p.18).

[86] For information about the number of data and 'device' requests from the US government complied with by the major tech companies, see, Joon Ian Wong (2016) 'Here's how often Apple, Google, and others handed over data when the US government asked for it', *Quartz*, February. https://qz.com/620423/heres-how-often-apple-google-and-others-handed-over-data-when-the-us-government-asked-for-it/

[87] Harvey, *The New Imperialism*, p.86.

[88] Ibid., pp. 147 & 157.

[89] Nancy Brune, Geoffrey Garrett and Bruce Kogut, (2004) 'The International Monetary Fund and the Global Spread of Privatization', *IMF Staff Papers* 51(2), 195–219

[90] Harvey, *The New Imperialism*, pp.147–148.

[91] Marx, *Capital*, p.799.

[92] Ibid., p.147.

[93] For example, a major underpinning of the 2003 Iraq invasion, which is a prominent concern in Harvey's book, is the so-called 'Rumsfeld Doctrine'. It is not mentioned, and Rumsfeld appears briefly, and only as a member of the neo-conservatives who were keen on the war. Nonetheless, the actual invasion was predicated on Rumsfeld's new vision for warfare, which was centrally dependent upon information technologies and the concept of the time-space compression. In his *Foreign Affairs* essay from 2002, Rumsfeld spelled out that the new US military would be characterised by 'rapidly deployable, fully integrated joint forces, capable of reaching distant theatres quickly and working with our air and sea forces to strike adversaries swiftly and with devastating effect'. See Donald Rumsfeld (2002) 'Transforming the Military: Riding to the Future' *Foreign Affairs* May-June. https://www.foreignaffairs.com/articles/2002-05-01/transforming-military

[94] Howard Rheingold (1993) *The Virtual Community*.

[95] Ursula Oberst et al. (2017) 'Negative Consequences from Heavy Social Networking in Adolescents: The Mediating Role in Fear of Missing Out', *Journal of Adolescence* 55 (February), 51–60.

[96] Silvia Estévez (2009) 'Is Nostalgia Becoming Digital?' *Social Identities*, 15(3), 393–410, p.401.

[97] Raymond Williams (1979) *Politics and Letters*: *Interviews with New Left Review.* London: Verso, p.252.

CHAPTER 6

The Culture of Digitality

> The age of consumption, being the historical culmination of the whole process of accelerated productivity under the sign of capital, is also the age of radical alienation
>
> Jean Baudrillard, *The Consumer Society*, p.207.

> In our time … algorithms are becoming decisive, and … companies like Amazon, Google and Facebook are fast becoming, despite their populist rhetoric, the new apostles of culture
>
> Ted Striphas 'Algorithmic Culture' 2015, p.407.

The double-alienation from analogue technique and the analogue forces a re-appreciation of the bases of culture-formation. What is often loosely termed 'digital culture' is considered here through the framework of digitality in order to derive new perspectives. Through these new perspectives, new estimations of what we 'gain' and 'lose' in the new processes of the formation of culture will serve as a more solid basis of critique of the present condition. This in turn will allow greater understanding and therefore greater possibility for a reassertion of human need over computer-instrumentalised logic, such that the current formations of culture by digitality may be re-shaped in ways more dialectic with our human-technology origins within analogue technique and analogue nature.

I begin by considering two differing but illustrative examples—in Lev Manovich and Bernard Stiegler—of what might be termed the failed 'promise of the digital' in respect of culture, cultural production and politics. I say 'failed', because their concept of the digital is one, like very many others since the 1990s, that is underpinned by analogue-based assumptions. Then I move to a more historically-informed consideration of the 'problem of culture' as a more clearly defined term within the context of capitalism. In particular, I

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look at the major theorisations of culture within capitalism from Adorno and Horkheimer, Guy Debord, Raymond Williams, Zygmunt Bauman and Jean Baudrillard, to show that these too no longer suffice as critique of the production of culture today, because although there was significant analytical purchase in these differing perspectives when they were written, they were conceived in a pre-digital time, and with analogue-dependent theories guiding their logic. I will end by arguing that digitality has brought consumerism—and by extension much of what now constitutes culture—into a radically new realm, one that requires a basic critique of the digital context before we can understand what is happening to what it means to be human and social.

Lev Manovich is a relatively early and influential computer and cultural theorist who provides a useful illustration of how a 'digital culture' is produced in a way that goes beyond the rather more diffused treatment that the literature tends to give to the subject.[1] Nonetheless, his work demonstrates how failure to identify digital as a new category of technology leaves us ill-equipped to register the full significance of digital culture and what this new culture portends in what is the most debilitating sphere of our time: digital consumerism. In his 2001 book *The Language of New Media*, Manovich titled his first chapter with the now quaint-sounding question: 'What is New Media?' A primary objective of not just the chapter, but the book, was to 'understand the effects of computerisation on culture as a whole'. He went on to predict:

> just as the printing press in the fourteenth century and photography in the nineteenth century had a revolutionary impact on the development of modern society and culture, today we are in the middle of a new media revolution—the shift of *all of our culture* to computer-mediated forms of production, distribution and communication. This new revolution is arguably more profound than the previous ones, and we are just beginning to sense its initial effects.[2]

The emphasis on 'all of our culture' is mine. But the author could and should have italicised it himself, just to make sure that the reader did not miss the phrase and its import. Manovich sees 'new media' in precisely such epoch-changing terms. He goes on to analyse some of the now-antiquated but then-prevalent 'new media' technologies, such as DVDs, CD-ROMs and 'computer multimedia', that were spearheading the transformation 'of all of our culture' at that time. 2001, we remind ourselves, is very recent history. It was the year of the Twin Towers and Pentagon attacks by Al Qaeda, another form of revolution whose legacies continue to shape much of the geopolitics of today. However, the cultural legacies of the DVD or CD-ROM are rather more difficult to discern. The CD-ROM simply became obsolete. These mirrored discs fell victim to their limited data and speed capacities. For its part, the commercially-packaged DVD, since 1995 the principal medium for TV series, box sets, etc,

now dwindles in those shrinking domains where streaming and wireless data and ready access to cloud computing have not yet killed it off.

Notwithstanding the relatively brief shelf-life of these supposedly revolutionary technologies, Manovich does seek to account for 'new media' more broadly, including how they shape culture-formation. He calls his theory 'transcoding', an idea whereby computerisation 'transcodes' or recodes previous (analogue) technologies, such as cinema and the printed page, so as to 'interact together in the interfaces of Web sites'.[3] Transcoding from analogue to digital is seen by Manovich as functioning in a kind of ongoing *evolution* where technology and human culture develop in mutual interaction. Digital technology, for Manovich, constitutes a new accretive 'layer', a 'computer layer' that will 'affect the cultural layer' in an ongoing interaction at the human-computer interface (HCI)—a term he borrows from mid-twentieth-century computer science.[4] This interface is a hybrid between a 'computer interface' and a 'cultural interface' that situates the user within 'an immersive environment and a set of controls; between standardisation and originality.'[5] The idea of HCI as the interface is suggestive in Manovich's work. It draws in spirit, if not directly, from J.C.R Licklider's influential 1960 essay 'Man-Computer Symbiosis', where Licklider theorised that given computers do well in many things that humans do badly, such as routine and predictable work-tasks, a 'symbiotic partnership' would be a positive and productive collaboration for humankind.[6] In this partnership Licklider predicted that in the near future:

> men will set the goals, formulate the hypotheses, determine the criteria and perform the evaluations. Computing machines will do the routinizable work that must be done to prepare the way for insights and decisions in technical and scientific thinking. Preliminary analyses indicate that the symbiotic partnership will perform intellectual operations much more effectively than man alone can perform them.[7]

Symbiosis will not only lead to a higher technological form but will also constitute a new stage of human progress on the back of the computer. Manovich, writing forty-one years later, and positioned deep within a milieu of postmodernity, hedges more than a little on the question of the future. He does this because his logic concerning human-computer interaction is driven primarily by the technology side of the equation. He speaks mainly of discrete computer, or computer-based, technologies, such as HTML code, Photoshop digital images and so on; and when he speaks of 'culture' he speaks of cultural artefacts (technologies) such as cinema, the printed text, the codex, and the clay tablet.[8] Culture as a human practice (as opposed to a technological artefact) is therefore a strangely inert component of Manovich's interaction. This is significant. In common with much other writing on culture—a word Raymond Williams termed 'the original difficult word'—Manovich does not define it for

his purposes, notwithstanding the fact that much of his theory depends upon a clear understanding of it.[9] I shall define it soon, but to close my critique of Manovich's approach, I will show how his downgrading of the culture-human element at the 'cultural interface' limits the theory. His rendering of culture as inert, or at least secondary to technology, means that the predictive value of his theory in particular is also limited. After detailing the logic and interactions of the 'technological layer' and 'cultural layer' in his transcoding theory, Manovich decides, rather feebly, that:

> Today the language of cultural interfaces is in its early stage, as was the language of cinema a hundred years ago. We do not know what the final result will be, or even if it will ever completely stabilize. Both the printed word and cinema eventually achieved stable forms which underwent little change for long periods of time, in part because of the material investments in their means of production and distribution. Given that computer language is implemented in software, potentially it could keep changing forever. But there is one thing we can be sure of. We are witnessing the emergence of a new cultural metalanguage, something that will be at least as significant as the printed word and cinema before it.[10]

For Manovich the future is open, but unclear. His logic demands this vague lack of direction; yet it need not be so. His logic demands vagueness because developments in digital technology are almost impossible to predict in any context. His logic would be correct if one looked at technology only in isolation. However, a 'transcoding', or technology-cultural interaction, that contains a component of active human *agency*, one based upon human needs, *could* contribute to a future and a culture that may be visible and predictable—at least in outline. For all the nuance of his layering and recoding, what Manovich is suggesting, still, is a straightforward and traditional process of technological evolution, with 'culture' following in its wake, and it is this that renders his theory unable to say much beyond the obviousness of digital's 'significance' vis-à-vis the printed word and cinema. The failure to attribute culture with agency, assigning it inert artefactual (historical) value instead, means that Manovich's theory cannot engage with that most primary element of individual and collective agency—prediction and planning that can allow a future to be envisaged and created to at least a certain degree. Notwithstanding his above average attempt at theorising the effects of digitality, when still in its relative infancy, Manovich takes us no further forward, then or now, towards the new understanding that this influential book claims.

Bernard Stiegler, eminent philosopher of media, whose theorising on the character of digital has commonalities with this book's arguments on the nature of the analogue–digital ontologies, does move our understanding of digitality forward, somewhat. Stiegler has written widely—and often abstrusely—on the subject, but in his essay 'Teleologics of the Snail', he argues with some clarity

that the digital wave has already enveloped economy and society and that culture-formation, especially political culture, is now subject to a *specifically digital* logic that requires us to 'radically rethink teleology, and open up the question of new forms of teleologies and teleologics … made possible and necessary by digital technologies of communication.'[11] In contrast to Manovich's accretion and evolution, the digital, according to Stiegler, has forced a radical technological break. Digitality has already asserted itself and has created a new sensibility through a technological rupture that has caused the 'process of the grammatisation of flows, [to become] a process of discretization'.[12] This binary of 'flows' and 'discretization' can be read as another way of describing the analogue–digital breach that I have theorised throughout this book. Drawing deeply from theorist of technics Gilbert Simondon who, like Jacques Ellul, saw technological development as having its own autonomy, Stiegler introduces a term from psychology, 'dissociation', meaning 'a detachment from reality,' to describe the digital media-user effect, which:

> form[s] dissociated milieus in which I am an addressee without being an addressor, and therefore do not participate in collective individuation, that is, in transindividuation; I am thus short-circuited. Dissociated milieus are industrially disorganised symbolic milieus, that is, milieus that are de-socialised, de-symbolised, de-sublimated, deprived of consistence; they are to this extent organizations which tend to become asocial, that is, without philia, in other words, without these affective ties that are the condition of all political life.[13]

This is alienation from politics by digitality. It is an alienation that stems from the needs of capitalism: its need for control, and its need for efficiency and instrumentalisation. The alienation that is digitality, or 'discretization' as Stiegler terms it, was an unanticipated side-effect of capitalism's technological striving for automation. But in Stiegler's analysis it has opened up a new space he calls a 'telecracy', a version, it seems, of Postman's 'technocracy', a space of political and social power that is perpetually shifting and contingent. Unlike Postman's negative version, Stiegler's is a space, at least, of political potential, a potential that is undermined for now by the very power that digitality makes possible—automation:

> Telecracy is … that which opens up the possibility of democracy. But it is also that which makes possible democracy's destruction, since, to the extent that it makes remote control possible, as the power of the distant, it constantly threatens this democracy, of which it is the possibility.[14]

Politics needs to fill this space: 'A new political struggle must take place',[15] he writes. But based upon Stiegler's own solution it's not apparent how this might be possible. And so it is here that Stiegler's useful insight into the dissociative or

alienating tendency of digitality begins to break down. Writing in 2007, Stiegler seems impressed by the potential of a newish device, the smartphone, whose logic is based upon the very technology he critiques. He is not unusual here. Nonetheless, at the beginning of the social media phase of digitality, Stiegler imagines his personal smartphone, the *Tréo 650*—a kind of keyboard-equipped *BlackBerry* of the period—to be a site of cultural and political potential: an incipient 'telecracy' that fits in the pocket. Of his Palm Inc.-manufactured device he writes: 'Between this *Tréo 650* and myself a circuit is formed'.[16] The completed circuit repairs the 'short-circuit' of dissociation and allows Stiegler to be whole again, connecting with himself and with others similarly equipped to form a collective and positive telecracy of networked and transindividuated individuals. In this positive loop, Stiegler envisages the emergence of:

> social networks which take shape by sharing in technologies of transindividuation, called cooperative technologies, and which constitute, as the digital *pharmaka* of the technological associated milieu of the Internet – where the addressees are always also senders – absolutely original processes of psychical and collective individuation. Here psychical, symbolic and technical associated milieus have become indissociable.[17]

Unlike Manovich, Stiegler accepts the analogue-digital bifurcation, but he does not fully appreciate how far-reaching the 'dissociation' has become. Instead he argues that the rupture is one that may be united, through digital technology itself, and that this may be achieved through what can only be inferred to be a knowing subject, acting alone with a smartphone, to form a psychical and technical space, a 'hypersocial and hyperpsychical space'[18] that connects the individual with others to form the basis for a new political culture. For Stiegler, a repairable breach must mean that digitality cannot signify a new category of technology, nor even a new logic, but a relationship (currently) in flux which can, in some vague and almost transcendent 'psychical, symbolic and technical' way, be made symbiotic and collectively political.

Stiegler speculated about the potential political power of his *Tréo 650* in 2007. But change was in the wind as he wrote. For example, on 29th June of that year Steve Jobs launched the first-generation iPhone. Its innovative use of apps on the touch-screen and the later hardwired link to the App Store meant that an immediately enraptured public could immerse itself—as millions of dispersed and dissociated individuals would—into the smartphone-Web 2.0 experience that was occurring at that time. Moreover, a few months previously, and no less consequentially, Facebook had changed its settings to allow its university-only 'community' to be joined by 'anyone with a registered email address.'[19] The wave of social media popularity would grow into a tsunami that sucked up the socio-cultural experience of billions—experience to be cut and diced into quantisable data in order to do the anti-social, anti-democratic and pro-capital things with them that would make Facebook and related platforms the

hegemons they are today.[20] Stiegler did not see this coming. Neither did he anticipate the forms and failures of attempted political 'transindividuation' such as the Occupy movement of 2011, or the Arab Spring risings of the same year; nor would he foresee the more successful attempts at the 'short-circuiting' of the individual by Russian disinformation, or the Chinese Communist Party's super-surveillance of its people, or the Google 'filter bubble', or the NSA PRISM program revealed in 2013 by Edward Snowden, or Cambridge Analytica in 2018, or government troll farms in many liberal and illiberal democracies—and the ready application of cybercops wherever regimes feel the need to keep up with the latest techniques of cyber-surveillance and cyber-oppression. All this and more showed clearly how vulnerable was the 'short-circuited' post-modern individual to even deeper individuation and alienation as networks became more ubiquitous. In more general terms, Stiegler's theory failed to see that mass-individuated smartphone access would quickly revolutionise the web and the economy in many socially-negative ways, and with many casualties—technological as well as social. One minor casualty was the large and cumbersome *Tréo 650* itself, with its obsolete icons and even more antediluvian keyboard. It succumbed almost immediately to the blitzkrieg popularity of the iPhone and was discontinued in 2008. Its maker was purchased by Hewlett Packard in 2010 and wound up a year later.

Stiegler wrote that the post-modern society of 'dissociation' was 'not inevitable' and that 'political struggle' would rescue it for the digitally oppressed. But such a society *was* inevitable. It was inevitable because he and we did not see digital technology in sufficiently thorough terms. It was inevitable because digital technology that is unrestrictedly coded for privatised and instrumentalised ends can only have such consequences if allowed to become hegemonistic. And so, in the second decade of the twenty-first century, progressive and collective 'political struggle' is almost everywhere facing defeat or is in retreat. There are few real signs of political hope or of grassroots success. We therefore need to understand such political developments not only from the perspective of digital technology, but also in the context of history. Timothy Snyder, in his short book *On Tyranny: Twenty Lessons From The Twentieth Century*, reminds us that many of the main strands of culture from the previous century, especially its politics, are still with us; but we need to learn to identify how they have acquired different surface manifestations in our digitality. For example, a virulent strain of national populism is back. But this is a virtual populism that exists in large part online and is empowered by the ways that the data companies are allowed to deploy their social media algorithms. It follows, then, that the propaganda that sustains the new populism didn't go away. Propaganda (as political communication) was digitalised to form the basis for a 'post-truth' dimension of our post-modernity. The appellation makes it sound like something new, but as Snyder notes, the spreading of disinformation as widely as possible through 'new media'—in his case radio—was a Nazi first principle of politics in the 1930s. Today, the discretised and quantised flux of digital

information that pulses around the web has been freed from democratic and fourth estate oversight. And so, for Snyder, our 'post-truth' era needs to be seen as a warning sign of an incipient digital 'pre-fascism'.[21] This is a disaster for politics as well as for the democracy that depends upon its processes. We can see pre-fascist articulations forming today in a rising authoritarianism in the political process—and in business. This development is, to employ Stiegler's term, very much a 'dissociative' digital authoritarianism. It is expressed as a new overlordship by Facebook- and Twitter-utilising elites in governments, in corporations and in right-wing political movements who draw their power from a cadre of the tech-savvy, whose specialist knowledge enables them to manipulate networks in order to manipulate users. Well-positioned elites in politics or business can thus 'mobilise' their base—be they politically motivated online followers of an ideology, or consumers of a commercial service—so to control them, either through targeted propaganda or targeted advertising, or a combination of both.

To get to the roots of digital culture we need to go deeper than Manovich or Stiegler. Neither discusses culture very much in their critique of the digital. They focus instead upon technology and politics, respectively. Culture, they imply, is an expression of technological and political change, as opposed to being the *source* of such change. If Manovich and Stiegler (and others like them) were sufficiently thorough-going in their analysis—that is to say, to see *digital itself* as the central element—then their consideration of their chosen themes of technology and politics would have been more radical, more penetrative and more persuasive, instead of being partial and limited. Technology and politics fall within the overarching human domain of culture. And *everything* is framed by it and by the discourses that sustain it. And so, in that sense, to think about the *culture of digitality* is not only to think about certain manifestations, but to think about what it is that makes such manifestations virtual and real at the same time.

Marxism and Consumer Culture: from Ground Zero to the Ghetto

Since the beginnings of capitalist modernity, the commodification process has colonised increasingly more of those realms of human activity expressed as 'culture'. And as this colonisation has continued, the culture-capitalism conjunction has been identified as an important challenge in the critique of modern life. This is the case not only in the Marxist tradition, revealing a more pervasive concern with the sociology of modernity as it pertains to culture.[22] For example, in the early twentieth century, as 'mass culture' became an established reality, Georg Simmel, in his work *Individuality and Social Forms*, identified what he saw as a 'problem' with culture-formation, one which he chose to analyse in terms of *authenticity*. He writes:

> History … concerns itself with changes in the forms of culture… But we can also see a deeper process at work. Life … can manifest itself only in particular forms; yet owing to its essential restlessness, life constantly struggles against its own products which have become fixed and do not move along with it. This constant change in the content of culture, even of whole cultural styles, is the sign of the infinite fruitfulness of life. At the same time, it marks the deep contradiction between life's eternal flux and the objective validity and authenticity of the forms through which it proceeds.[23]

Simmel is asking: culture rises up from the 'fruitfulness' of everyday life, but to what extent does an objective reality, the 'external forms', impinge upon it to stall or hinder its evolution? And what happens to 'authenticity'? Though no Marxist, Simmel's 'external forms' may be seen as akin to objective capitalist society, with its forms impressing the commodity upon the individual and wider society as an increasingly naturalised force that would in time—in the time of modernity—become a dominant factor in the *production* of culture in the sphere of human experience. Ours is a culture in which people are increasingly defined by commodities. We tend to accept them, often unreflectively, as bearing the marks of who we see ourselves to be in our individuated social contexts—in the varied and graded expansion of what Pierre Bourdieu would later call the 'cultural goods' that are also the symbols of 'distinction' that he wrote so penetratingly about in his 1984 book of that title.[24]

I will analyse here the particular mechanism of the objective 'external forms' that impress upon subjective lives the 'cultural goods' that become part of life in terms of their symbolic meaning. I will pursue this, in the first instance, through a core, but now somewhat discontinued, Marxist idea of 'base and superstructure'. This is an idea that stems from Marx himself, and which is encapsulated in another of his much-quoted lines: 'the mode of production of material life conditions the social, political and intellectual life process in general'.[25] This translates as: the socio-technical foundations of any society have a substantial effect upon the consciousness of its population. After discussing this process, and showing why it still matters as a model of analysis, and what it tells us about capitalism as a technology-driven social relation, I will show how the 'base and superstructure' model—in Marx and in interpretations of him—has been transformed by digitality, and how this in turn has transformed the nature of consumerism and politics in ways that principally reflect the needs and the logic of digitality.

We have already touched upon the thought of Raymond Williams in regard to both technology (television) and politics. His writings on culture, however, have been much more influential, and so it is to Williams I will turn for a more concrete definition of the term. In 1989 Verso published *Resources of Hope*, a collection of Williams's essays on political and cultural theory. An article he wrote in 1958 titled 'Culture is Ordinary' appears in it. This is a foundational

text on how not only to understand and define culture, but also to see culture's lived experience as a way of understanding ourselves and our historical, social and economic context. The clue to Williams's idea is in the title. It is a point he reiterates throughout the text, observing that: 'Culture is ordinary, that is where we must start'; 'Culture is ordinary: that is the first fact'; and 'Culture is ordinary, in every society and in every mind'.[26] So, what does it mean to argue that 'culture', with its persistent connotations of both 'high' and 'low', is in fact *ordinary*? Williams writes what is partly a semi-autobiographical analysis that uses the context of his Welsh working class origins and his later life as a Cambridge academic to frame his hypothesis on culture. For example, Williams is a Marxist, but of a 1950s 'neo' sort, that rejects any 'prescriptive' interpretation of Marx's base and superstructure theory and dismisses the idea that the productive base of society 'is in some way a cultural directive'.[27] His direct experience of working-class culture taught him otherwise. However, knowledge, communication, travel, and learning play their parts, too, and they do so sometimes in important ways. Williams continues, and with clear reference to how Cambridge culture is imbricated with that of his Welsh village:

> A culture has two aspects: the known meanings and directions, which its members are trained to; the new observations and meanings, which are offered and tested. These are the ordinary processes of human societies and human minds, and we see through them the nature of a culture: that it is always both traditional and creative; that it is both the most ordinary common meanings and the finest individual meanings. We use the word culture in these two senses: to mean a whole way of life – the common meanings; to mean the arts and learning – the special processes of discovery and creative effort. Some writers reserve the word for one or other of these senses; I insist on both, and on the significance of their conjunction.[28]

In one sense, what Williams in his 1976 book *Keywords* called that 'original difficult word' is actually rather simple—and rather ordinary. Culture is about meaning. As pattern-seeking creatures, humans are all about attributing meaning to things. Broadened out from individual meaning-making, 'the making of a society is the finding of common meanings and direction', as Williams puts it in a beautifully minimal formulation.[29] Moreover, there is a strong sense that he views experience and meaning in culture-forming as experiences and meanings that can be creative and authentic expressions of individual self-realisation. Whereas Simmel saw a difficult contradiction between 'life's eternal flux' and the sources of 'validity and authenticity', Williams sees no such problem, but expresses, rather, a positive and somewhat romantic view of culture. And it is one—as the title of the book in which the essay appears proclaims—that constitutes a 'resource' for understanding this thing called culture. His is a view, in other words, that democratises culture, makes culture 'ordinary' and places it

in the minds and hands of everyone as a natural resource that all can be a part of and share.

Williams had more to say, and in less autobiographical terms, about how 'ordinary culture' is affected by objective forces, such as technology and economy. He did this in a 1973 essay in the *New Left Review* titled 'Base and Superstructure in Marxist Cultural Theory'. In the same manner as in his 1958 essay, Williams takes care to dissociate himself from what he terms the 'unacceptable' and 'commonly held' Marxist view expressed as a 'determining base and a determined superstructure'—the idea of an almost mechanical process whereby capitalism's productive forces unsparingly define or govern the superstructure of society and its forms of culture.[30] Marx himself, Williams notes, did not subscribe to such a process, but instead emphasised the 'conditioning' effect of the 'base', its producing of a context or general environment that acclimatises the 'superstructure' towards predispositions. Williams thus gives the 'commonly held' 'determination' effect of base to superstructure a rather different evaluation, writing that: 'we have to revalue "determination" towards the setting of limits and the exertion of pressure, and away from a predicted, prefigured and controlled content'.[31] Moreover, and this will become important later in the context of digitality, Williams makes a characteristically Williams neo-Marxist statement that acknowledges the complexity of it all:

> crucially, we have to revalue 'the base' away from the notion of a fixed economic or technological abstraction, and towards the specific activities of men (*sic*) in real social and economic relationships, containing fundamental contradictions and variations and therefore always in a state of dynamic process.[32]

In other words, there can be no room for rigidity when theorising the relationships between economic and technological forces and how they interact with individuals in society and in the shaping of their cultural meanings. The interaction is always in motion and the essence of the process is revealed in the concrete activities of people in everyday life and in the patterns and institutions that form and dissolve to shape and reshape meaning in cultural life.

And so for Williams there is more than just endless flux and interpenetration between base and superstructure. In his 1973 essay, which coincided with an Anglophone 'discovery' of Antonio Gramsci,[33] Williams ingeniously introduces Gramsci's concept of hegemony, with which to give the base-superstructure process greater analytic power. The power of hegemony, as Williams understands it from Gramsci, is that it is an almost subterraneanly powerful form of ideology that is 'deeply saturating of the consciousness of a society'.[34] So deep that it 'even constitutes the limit of common sense for most people under its sway [and] corresponds to the reality of social experience very much more clearly than any notions derived from the formula of base and superstructure'.[35] The power of hegemony, as compared to the relatively shallow and transient

power of ideology, is that not only does it lie deep within society, and its ideas appear often as common sense, but that hegemonic ideas can also appear as *neutral* or *positive*, when they may not necessarily be so. An example of such deep hegemony is the concept of capitalism itself, which until recently, and in the US at least, was widely equated with democracy, and functioned also as a basic expression of human freedom.[36] More pertinent for our purposes is the supposed 'neutral' functioning of technology, and of computers in particular. As we saw, the Cold War discourse around computing paved the way for digital technology that would be seen as a wonder-technology, a 'magical' technology based upon the 'neutral' concepts of logic and mathematics that would reproduce a multitude of 'efficient' and 'smart' applications throughout the economy and society. However, even if functioning at a deep cultural level, hegemony is able to succeed only through the maintenance of a power discourse that consists of, as Terry Eagleton observes, a wide variety of 'practical strategies by which a dominant power elicits consent to its rule from those it subjugates'.[37] In other words, as a deep-lying hegemonic idea, consent can function as a default attitude until, for whatever reason, 'power nakedly reveals its hand' to become 'an object of political contestation'.[38]

A discourse that carries a hegemonic idea, or set of ideas, is a form of communication. This much is clear. But if we think about the *particular mode* of communication in the base-superstructure context, this enables consideration of how and to what effect communication has been transformed through digitality. Régis Debray provides a useful framework for this consideration when he writes that it is 'Impossible to grasp the nature of conscious collective life in any epoch without an understanding of the material forms and processes through which its ideas were transmitted—the communication networks that enable thought to have social existence.'[39] For Debray, the material forms and processes are the source for understanding the nature of the communication itself. Much like McLuhan's 'medium is the message', Debray claims that it is the medium itself that constitutes the most important aspect of communication—shaping the content and giving 'social existence' to it. The material aspect of communication is something Christian Fuchs takes up in connection with a base-superstructure interpretation of Raymond Williams to consider how these function in relation to digital communication—and to the production of culture. Fuchs's theory thus constitutes a rare treatment of the concept in the transition to digitality. Fuchs begins: 'wherever there is culture, there is communication. When we communicate, we constitute culture.'[40] In the context of digital society, however, it is often claimed that digital's immateriality constitutes a central aspect of the transformed nature of communication, and as Fuchs phrases it, digitality 'tends to advance the ideology of the immaterial.'[41] To counter this tendency, and building directly upon Williams and his materialist conception of communication in the base-superstructure process, Fuchs argues for what he terms a 'communicative materialism' that would act as a corrective to the ideology of digital immateriality.[42] Today, the ideology of immateriality has become

hegemonic. It has rendered the materialist conception of history, as well as the materialist underpinning of the base-superstructure, as secondary—both as a way to understand capitalism, and to understand its social expressions such as class, class consciousness, and culture-formation. The ideology of digitality, especially in its communicative forms, Fuchs points out, has obscured the deeply materialist character of its basic functioning. We must look at 'the conditions of production of the internet and digital media' to assess its reality, he argues, and if we do, we will see relations and forces of production that are not too different from those of the pre-digital era. For example, the internet is not a clean and weightless assemblage of immaterial efficiency. It is an immense drain on electricity and could consume 20 per cent of all the world's power by 2025.[43] Digital hardware contributes vast amounts of material waste in the form of steel, plastics, glass, and heavy metals like cadmium, antimony, lead and mercury. Moreover, an international division of labour—humans involved in the production, distribution and discarding of digital products—thrives today in ways that would have been recognisable in 1950 or 1970. Fuchs makes the compelling case that this underlying material reality of the communicative basis of our globalised society must be recognised and promoted as the basis for a humanly-based form of resistance to the new depredations of digital capital. He sums up Williams's materialist communication with an approving restatement of its irreducibly human core:

> Whereas communication is a human social process and a practice, communications are systems, institutions and forms. There is a dialectic of communication and communications: Humans communicate by means of communications whereas communications are created and re-created by human co-production and communication.[44]

According to Fuchs, it is only though a revelatory 'communicative materialism' that digital immateriality—as a pernicious ideology—may be properly understood and resisted by means of a grounded understanding of the continued importance of the materiality of production and of culture, as much today as it was in the 1950s or 1970s.

It will be clear from what I have written previously that whilst any Enlightenment-based and Marxist-based future and present-day resistance to capitalism can be built only upon a material-communicative basis, it is necessary to prioritise. Digitality is the first problem. Digital technology, acting as another category of technology, the first technology that we have to compare and contrast with the analogue, must be seen for what it is. It must be seen for what it compels us to realise—that we ourselves are analogue in our essence, in our evolution, and in the institutions, cultures, societies and economies that have been expressions of these. It must be seen also that, as currently constructed and applied through market-based and capitalist-driven processes, digital technology is antithetical to the analogue-based legacies that are the basis of historical

materialism and much of our present-day historical conditioning in terms of how we imagine the world to be. For example, liberal democracy and social democracy were conceived and spread using the 'material forms and processes' of communication from the eighteenth and early twentieth century, respectively, yet we assume they can function in the same way through digital means.

All this leads to the conclusion that, on the concept of base-superstructure and hegemony in the context of culture-formation, Williams was prescient in his identification of the materiality of communication. But Fuchs underestimates the power of digitality, both as an ideology—which it is—and as an antithetical techno-logic that deeply reaches into every register of society. Moreover, the analogue-digital dualism, and the eclipsing of the former by the latter as the hegemonic techno-logic, force us to acknowledge that the base-superstructure analyses, from Marx through Williams to Fuchs, must be seen for what they are—analogue constructions from an analogue era. Base and superstructure, as articulated by Williams and Fuchs, albeit with nuance and suppleness, need to be put to one side as a way to understand capitalism, until the nature of digitality is understood and prioritised as a central question of our time.

The Withering Roots of Analogue Culture Within Digital Capitalism

Interpenetration between base and superstructure suggests a certain separation of the spheres. Williams saw these spheres as functioning in a 'totality', but that this concept only made sense in the context of hegemony, the crucial ideological and communicative force that could provide the tipping-point for the success or otherwise of an ideological component within capitalism.[45] Nonetheless, separation of the spheres, involving the effects of time and space, meant that during the long analogue era of capitalism there were elements of culture-formation in the superstructure where the productive forces of the base could colonise it completely, or lightly, or not at all. This was something that Williams and his close contemporaries, E.P. Thomson and Eric Hobsbawm, understood well. Thompson, for example, was a Marxist labour historian of the early New Left who chronicled the working-class cultures of the eighteenth and nineteenth century in industrialising Britain. In *Customs in Common*, Thompson makes the useful point that 'custom' was a term that 'carried many of the meanings we now assign to "culture"' and that 'many of the classic struggles at the entry to the industrial revolution turned as much on customs as upon wages of conditions of work'.[46] In other words, at the early phase of industrialisation, the sphere of the base was seen as another, alien, sphere that could represent an existential threat to pre-industrial culture. Thompson provides an example of what may be seen as a 'common' protective response in many parts of Britain to the incursion by capitalism into culture through what he terms 'rough music'. This was a public display of popular sentiment in towns and villages by

means of a 'raucous, ear-shattering noise' made by people parading through the streets, banging pots and pans to create a 'music' that could be mocking, or lewd, or obscene, or a form of 'ritual hostility' to some local issue or person that was offensive to community norms.[47] Thomson writes that this custom was a part of a Europe-wide practice that went back at least to medieval times, but was then expressing customs and meanings and memories against the incursions of capitalism in the early phase of industrialisation. Historian Eric Hobsbawm wrote of a later period of working-class culture, where capitalism and industry were more centrally a part of individual and community lives. As part of the rise and spear of industry, 'authentic' forms of culture that still existed were, to employ Marx's term, becoming 'conditioned' by capitalism. This was a transition phase expressing what Hobsbawm called a 'semi-industrial pattern of culture'.[48] We can still recognise forms of this today in their specificities, but we can recognise also that they are dwindling or becoming quaint or archaic in the age of digitality. Hobsbawm describes a transition phase from semi- to fully-industrialised culture in the 1840s:

> In the pre-industrial towns, communities of craftsmen and domestic workers evolved a literate, intense culture in which Protestant sectarianism combined or competed with Jacobin radicalism as a stimulus to self-education, Bunyan and John Calvin with Tom Paine and Robert Owen. Libraries, chapels and institutes, gardens and cages in which the artisan 'fancier' bred his artificially exaggerated flowers, pigeons and dogs, filled these self-reliant and militant communities of skilled men...[49]

By the end of the century, however, there existed a 'wholly industrial life' in which the 'cultural needs' of the workers and the poor were formed.[50] By then the spheres had merged into their 'totality', or 'complex whole' as Williams put it, but with still the distinct and recognisable 'class character of a particular society'—which for Williams was those of South Wales and Cambridge that shaped his own cultural life with their 'ordinary' meanings.[51]

Such culture-forming was based upon analogue capitalism. Its techno-logic provided the forms of time and space that were based upon the concept of 'recognition', where the effects of the productive base showed a discernible link between cause and effect, and where the individual and community were 'conditioned' to adapt or resist or evolve with its logic. This generated in humans what Glenn Adamson terms a 'material intelligence', where 'scale and distance' were produced analogically and set at *human* scale and distance.[52] This was the case at least until the dawn of the electronic age of the 1960s when McLuhan told us that the new age of electronically augmented 'extensions of man' posed new ontological questions concerning the human-technology relationship.

Intellectually and philosophically, as far as understanding media technology is concerned, we have never really gotten beyond the aphoristic skein that McLuhan drew over media's ontological consequences. And so we were

unprepared for the time when McLuhan's 'electronic' age became the digital age. We largely assumed that they were the same, an evolved and more sophisticated form of communication, when they were not. McLuhan's electronic 'global village' was analogue technology at its furthermost point of recognition for media technology users. And this was what made it (and McLuhan) so fascinating. For example, although 1960s television appeared almost as a form of magic in a box in front of our eyes, we could still *recognise* the process in terms of its technological cause and effect. Satellite transmission of 'real-time' global events such as the 1968 Olympics, or the live unfolding of the hostage crisis at the Munich Olympics four years later, stretched the imagination in terms of the technical feat involved. The SYNCOM satellite that televised these was analogue, but this was the time of analogue-digital crossover in satellite communications.[53] Such global spectacles could generate new cultural meanings so that we could begin to feel ourselves as being a part of the global village, even though:

> to someone in London or Sydney, Mexico and Munich could still feel very distant when represented by grainy pictures and feeble analogue signals. However, although the message of the media was still analogue, it was a media technology in decline, and it was *this* message—the message of one category of technology being replaced by another—that we collectively failed to register.

For those billions caught within the logic of digitality today, the experience of space shrinks, and the experience of time accelerates. One effect is that our ancient faculty for analogue and human-scale recognition does not function so well. Nowhere feels distant any longer, and we don't really understand or reflect upon this, especially when the media seems to be for 'free' through Facebook or Zoom or WhatsApp.

Digital culture is produced through different technological means than was analogue culture. The base and superstructure of Williams and Fuchs tell us how culture formed in the analogue industrial world, but their analogue-based analysis cannot tell us much about culture formation in the digital context. Within the techno-logic of digitality there are no spheres of base and superstructure that imbricate and mix and overlap to constitute a (modern) totality, one that is subject to a recognisable power-discourse of hegemony. Production and consumption (base and superstructure) function within a single sphere—a digital sphere, a digital loop that has excluded and alienated the individual, and society, from the material and analogue 'circle of action' that according to Arnold Gehlen constituted our actual essence and our actual deep point of authenticity—indeed, our only point of authenticity. Culture is still formed by meanings, but such meanings are formed through a non-recognition of the cause and effect of digital communication. This in turn means that we do not fully understand or recognise the basis of our culture-formation. We

have entrusted it to the new 'magic' of networked computation, a growing ecology of digital applications and devices that shrinks space and accelerates time so as to make communication 'efficient' for us for ostensible reasons of convenience. At the same time, however, these media obliterate the analogue underpinnings of at least 500 years of print culture—a different medium with a very different message.[54]

Digital culture is extra-'ordinary' culture but not in a way that Williams would see as positive, where the 'nature of a culture' is 'always both traditional and creative'. As we will see, digital culture is subject to a logic that itself does not—cannot—recognise or promote either tradition or creativity. This is 'ordinary' to use Williams' term, in that it contains 'meanings and directions'[55] that emerge from the 'specific activities of men (*sic*) in real social and economic relationships.'[56] However, these new meanings and directions emerge from our technological relationship with a new category of technology. Consumer culture forms a vast domain of cultural practice within the logic of digitality. But it is so pervasive and so transformed from its analogue origins in the late nineteenth century that the term 'consumer' is now a misnomer. I will end this part with some considerations on how we might think about this term in the context of digitality. But firstly we need think about consumer culture historically and critically before reflecting upon its dénouement—to then reflect upon what has replaced it.

Consumer Culture's Academic Ghetto

'Consumer culture' has functioned as a critical concept at least since the 1940s and the publication of 'The Culture Industry' by Adorno and Horkheimer.[57] Their essay in many ways is the 'ground zero' of critical theory and political economy in questions of culture within capitalism. With the most advanced and developed mass culture of the US as the object of their analysis, the Frankfurt School authors describe an almost science-fictionally dystopic vista of mass 'obedience to the rhythm of [an] iron system' of fiendish deception and total control by a relentless commodification that impresses its uniform stamp upon everything—material and consciousness, 'body and soul'.[58] It is a system from which there is no escape, and no retreat into a pre-capitalist idyll untouched by accumulation's insatiate appetite. There is no solace to be found within 'high' culture, either, as this too is now a 'species of commodity' promoted more openly and brazenly than ever before.[59] For many, Adorno and Horkheimer's grapeshot blast was ideologically and psychologically too much to bear in terms of what it implied for prospects for working-class liberation, especially in a post-war climate of working-class optimism, and with social democracy broadly ascendant. It suggested that consumerism had almost a death-grip upon the consciousness, not just of workers, but everybody, and that this was something Marx and Marxism(s) had paid not nearly enough

attention to. Marxists, especially, found such a theory of 'superstructural reality' difficult to accept, and so on the left the culture industry thesis became either a reality suppressed, or a theory channelled safely into the universities for cloistered and ever-ongoing re-interpretation. Regarding the latter fate, as Fredric Jameson put it:

> Not only is this repression of the cultural moment determined by the university structure and by the ideologies of the various disciplines—thus, political science and sociology at best consign cultural issues to that ghettoizing rubric and marginalized 'field of specialization' called the 'sociology of culture'—it is also and in a more general way the unwitting perpetuation of the most fundamental ideological stance of American business…[60]

Within the university is where the idea has remained—and so attenuated as a way to understand the actual power of accumulation and the commodity when applied to culture. This in retrospect was a fatal intellectual turn. It was a problem compounded by the fact of the post-war 'golden age' of the 1950s and 1960s, when the working-classes of the Western democracies embraced consumerism and its culture with alacrity. Workers chasing after jobs and overtime to buy cars and homes and cinema tickets will rarely be militant and will never be revolutionary. Thought leaders within and around the universities were already re-interpreting the connection between capitalism and culture. Vance Packard, for instance, an English graduate and then journalist, published a huge best-seller in 1957 titled *The Waste Makers*. He sought to criticise and negativise the term 'consumer' and the kind of society it produced. However, Packard didn't critique capitalism or capitalist consumption—such ideas had been consigned to the universities—but instead targeted 'the mass-marketers and status-promoters [who] have moved into culture in a large way' with their use of new psychological insights with which to manipulate the hapless consumer who buys impulsively the commodity with built-in obsolescence after being lured to it by a price-cut through 'aggressive advertising and selling.'[61] In popular books, Packard and others exposed a problem with the negative logic of consumption within competitive capitalism, but they tended to look at societal effects (such as over-consumption) as opposed to deeper causes—philosophical, economic or technological.

Others in the 1960s' new left felt energised to make some kind of critique of the commodified 'superstructural reality' that permeated everyday life and did see capitalism and its commodification logic as the problem. However, they mostly refused to subscribe to the radical dystopia conjured up by the Frankfurt School, and maintained that revolutionary ways to resist must be found. One of these was Guy Debord. In the 1960s it was Debord who led the semi-popular, semi-intellectual charge against consumer capitalism. He took it for granted that industrial commodities now controlled and shaped culture.

In the new media age of the mass-consumed image, Debord saw 'the image [as] the last stage of commodity reification' and therefore the site of the final battle against capitalism's commodifying assault upon the possibilities inherent in human culture-making.[62] For Debord and the Situationist movement, what he termed détournement, or the use of artistic cunning, of cleverness, of knowingness, in order to subvert the commercial image, text, practices and ways of seeing, was how resistance to 'commodity reification' must begin. Debord promoted détournement as a kind of 'anti-art' to use against a high and low modern culture which he saw as 'dead' in terms of its capacity to represent or express or practise culture that was in any way free or authentic.[63] We see détournement's historical legacy today in the art of Banksy.[64] However, Debord and his movement were never able to transcend consumer culture through détournement. Indeed, as they themselves had identified—and this was something that Adorno and Horkheimer would have seen as anyway inevitable—the *recuperation* of their strategies of resistance once 'the shock had lost its punch' was the ineluctable fate of détournement.[65] Alongside the fate of the works of Banksy today, the 1960s poster image of Che Guevara stands as a good example of the recuperation process: an image of the Argentinian revolutionary by Alberto Korda that was stylised and commodified and consumed by millions after Guevara's death in 1967.[66] The image circulates widely still, but as a sign emptied of any trace of the Latin American struggles against imperialism and capitalism in the 1950s and 1960s.

Concerned with the same issues as Debord, Adorno and Horkheimer, though with different conclusions, was Herbert Marcuse, possibly the last great voice of the 1960s who could appreciate the extent of the terrible damage that consumerism had inflicted upon prospects for human freedom. But he, too, was ultimately pessimistic. Art—and 'higher art' especially—was the only hope for possible salvation, according to Marcuse. The language of art, he wrote, 'creates another universe of thought against and within the existing one'.[67] But he also saw that our cultural universe within commodifying capitalism was an irreparably fragmented one, where feelings, impressions and experiences are unable to connect. The irony is that art can create a fragment or zone of culture wherein it becomes possible to recognise the empty and degraded reality of the wider superstructure. However, to know this is also to know that we, individually and collectively, are unable to do anything about it—except to refuse (as much as is possible) to be a part of the machine that capitalism creates. But even Marcuse could not sustain his optimism. As he put it at the end of *One-Dimensional Man*, the 1960s book that would make him famous for a time in the latter years of that decade: 'totalitarian tendencies of the one-dimensional society' are of a force and power where 'nothing indicates that it will be a good end.'[68]

A new decade saw a new philosophical attitude towards the conjunctions of capitalism and culture. It is perhaps no coincidence that the cultural studies discipline that Raymond Williams helped to create began to burgeon in

these intellectually more conservative decades of the 1970s and 1980s. Cultural studies by then had become an established 'field of specialisation', to use Jameson's term. And a post-1968 generation of scholars, many with an experimental neo-Marxist perspective on things, looked for hope, or alternatives, or some kind of authenticity in the processes of culture formation. However, many of those who would make names for themselves in the academy looked for these not in a direct critique of the commodity logic as an expression of capitalism and its technologies, as did Adorno, Horkheimer, Debord and Marcuse, but instead in an *embrace* of the commodity logic in the search to find freedom within it.

Stuart Hall must be mentioned here because he was one of the most influential cultural theorists up until his death in 2018. From the 1970s on Hall combined a post-colonial theorising with a newly-popular Gramscian framework to identify the power structures at work in cultural production. He sought to de-construct these and lay open their capitalist and imperialist logics. Hall and his numerous followers set the Anglophone culture studies departments abuzz in these Thatcher and Reagan years. Cheap money fuelling consumer debt saw commodity culture explode across a globalising capitalist sphere and provided a vast cornucopian spectacle for theorists to work with. New generations of academics in the field of cultural studies (and in social theory, politics and sociology) were employed to decode TV shows and films, as well as shopping malls, youth fashion and music, sport, advertising, video, comics, and much else. Resistance and counter-hegemonic strategies and sub-cultural symbolic dress-codes became the currency of analysis in these decades.[69] Nevertheless, and to draw from Jameson once more, this perspective was born in the universities, and was never anything other than ghettoised theory and knowledge that circulated largely in the heads of academics and students and in the specialist books and journals that published it. But Hall was revolutionary enough to agree with Raymond Williams that politics must still play a role in cultural theory and practice. Accordingly, he saw the field of culture as a part of the 'long revolution' (Williams's term) that aims for 'popular control' over culture and its forms.[70] For Hall this involved spreading the word beyond the ghetto. The magazine *Marxism Today* in which Hall chose to publish 'The Culture Gap' in 1984 was a publication that could be picked up in any fairly large newsagent or railway station in Britain at that time, and so was a potential vehicle for popularising a critical awareness of consumerism. As a monthly it sold up to 15,000 copies, a circulation far above any academic book or journal. However, *Marxism Today's* politics were rather different from other socialist-left journals such as the *New Left Review* or the *Monthly Review*. Its editor Martin Jacques was quoted in the *New York Times* in 1988 as saying, apropos the magazine's political positioning, that 'The left must be committed to economic modernisation and international competitiveness.'[71] There is no little irony here that Hall, a devotee of Gramsci, would publish in a journal whose editor displayed telling Gramscian signs of being under the spell of the hegemony of 1980s neoliberal

ideology. This was a world of fragmentation that Marcuse had identified more than twenty years before, but vastly more so. And as we can see, the ideas and alternatives that Marcuse saw as impossible to connect in a 1960s world of 'total reification' were, in Hall and his acolytes, critiques of resistance from *within these fragments*. They were degraded ideas from an even more degraded era in terms of the depth and scale of an insatiable consumer culture. And so, *Marxism Today's* ideas, and by extension the ideas of Hall too, had a negligible constituency in terms of workers looking for counter-hegemonic strategies in their consumer-culture lives. The magazine's circulation inevitably dwindled as neoliberal globalisation became increasingly ascendant. It ceased publication in 1988, a time when in the popular imagination 'Marxism' meant Erich Honecker, or Nicolae and Elena Ceaușescu, leaders who would soon feel the tide of history turning against them, and where Martin Jacques's eccentric views about 'international competitiveness' in the realm of Marxist ideas mattered little to a world thinking about other things.

Zygmunt Bauman was a significant writer who held a consistent line on culture throughout these times—criticising the ghettoed theorisations of consumption and culture and of the 'freedoms' and 'choice' that consumer society purportedly brought. Viewed by Ali Rattansi as the 'Adorno of our times'[72] Bauman wrote that capitalism provided freedom and choice, but only within the parameters of market-approved commodities—and this was to render the consumer essentially 'unfree' or trapped within the boundaries of the capitalist market itself. To have active agency in the marketplace, Bauman writes, is to have hardly any kind of agency at all, and certainly not political agency:

> All possible dissent is … depoliticized beforehand; it is dissolved into yet more personal anxieties and concerns and thus deflected from the centres of societal power to private suppliers of consumer goods. The gap between the desired and the achieved states of happiness results in the increased fascination with the allurements of the markets and the appropriation of commodities.[73]

Bauman speaks here of the power of the commodity and its capacity to generate the social practice that—as an unintended consequence—establishes an apolitical culture, or a culture that is 'political' only insofar as it is expressed as a cultural politics of style or taste or distinction. Such culture is not a culture of social change. It is, rather—in the context of digitality—a new and distinct form of post-modern culture that is narrow in scope, inflexible regarding what is acceptable, and regressive in respect of its capacity to grow into something *actually* new.

Bauman's view that consumer culture is 'depoliticized' is in fact only a surface articulation of a deeper and more serious problem. Jameson moves closer to identifying it when he writes of the ghettoisation of an idea by a dominant ideology. The study of culture was kept safely within the universities, he saw,

there to be endlessly interpreted and to form an intellectual backdrop wherein commodity culture is a given, a normative world *within which* meaning is made. Judith Butler made a similar point about Marxism being relegated to the universities to become 'cultural studies', or Marxist theory and practice being mainly about the study of culture.[74] But Jameson saw the ghettoisation of the particular idea of mass culture under capitalism as being the effect of reification. Mass consumer culture holds out the promise of a Utopia of material plenty and ontological fulfilment, but delivers only illusions—and does so cynically, especially in its advertising. Mass culture and commercial culture, however reified and reifying they may be, still, according to Jameson, have as their 'underlying impulse'… 'our deepest fantasies about the nature of social life, both as we live it now, and as we feel in our bones it ought to be lived.'[75] And within this space of our deepest fantasy there exists hope for a reawakening of the 'ineradicable drive towards collectivity' that may serve as the 'indispensable precondition for any meaningful Marxist intervention in contemporary culture.'[76]

Where Jameson sees a glimmer of light, Adorno and Horkheimer perceive only stupefying darkness. In between these two main poles of thought, poles that are anyway not too far apart, there was (and still is) a much wider analytical space; a ghettoed space to be sure, but one from where Marxist and left-oriented critiques of culture and the consumer society are still developed today. From within the ghetto's 'field of specialization' they generate what is perhaps the bulk of the mainstream understanding of the culture-commodity relationship, and so for that reason must be included in our narrative. During the 1980s and 1990s, decades of energetic neoliberal globalisation, prominent theorists such as Judith Williamson and Paul du Gay would half-critique and half-celebrate consumer society, and so were able to avoid the dreaded 'pessimist' shadow that hangs over the Frankfurt School. Williamson, for example, in her *Consuming Passions* from 1986 argues that advertisers channel our emotions and turn them into passions in a perspective not far removed from Adorno and Horkheimer's 'mass deception' thesis. At the same time, however, she uses Marx to suggest that consumer culture is a trap from which there is no escape, so we might as well enjoy it, and use it to shape our identities. She begins her book with a scene-setting side-swipe at Marx who, as she puts it, 'talks of the commodity as "congealed labour", the frozen form of a past activity; [whereas] to the consumer it is also a congealed longing'.[77] For Williamson, this longing or passion can be uncongealed and set free through the 'power of purchase'. To buy can be a form of 'active power' and this power and passion that are the expression of latent consumerism are 'what breathes new life into objects'.[78] To buy something is therefore not just to 'own' it, but also to 'be' it, such that it can express who you are or who you wish to be.

Later on in the book she continues with a narrative on the work of the pioneer postmodern photographer Cindy Sherman to illustrate the power of choice that she (Williamson) wields as she faces a wardrobe full of things to wear:

> When I rummage through my wardrobe in the morning I am not merely faced with a choice of what to wear. I am faced with a choice of images: the difference between a smart suit and a pair of overalls, a leather skirt and a cotton skirt, is not one of fabric and style, but one of identity. You know perfectly well that you will be seen differently for the whole day, depending upon what you put on; you will appear as a particular kind of woman with one particular identity which excludes others. The black leather skirt rather rules out girlish innocence, oily overalls tend to exclude sophistication, ditto smart suit and radical feminism. Often I have wished I could put them all on together, or appear simultaneously in every possible outfit, just to say 'how dare you think any one of these is me. But also, see, I can be all of them.[79]

Paul du Gay was a rising cultural studies thinker in the mid-1990s who edited a book with Stuart Hall titled *Doing Cultural Studies*. Its second edition was blurbed by the *LSE Review of Books* as 'Arguably the most famous book in its field ...'[80] He agreed with Williamson's approach to the analysis of consumer culture. He believed that there was an active agency in consumer culture, and that the commodity provided the material means for positive 'self-constitution'.[81] However, Williamson's own words in the above quote show clearly the restrictions the commodity logic imposes. To begin with, the process of 'self-constitution' is one of surface image, and not of any deep-reaching ontological transformation. The surface image can and does change at a whim. And what du Gay celebrates in Williamson as *bricolage*,[82] is in Williamson's own telling, especially when extolling the photography of Sherman, more like confusion, frustration or what Harvey calls 'schizoid'.[83] Consumption and culture in the sense that Williamson conveys are of an early and accommodating postmodern form. Shopping, she reasons, 'makes you feel normal'. Williamson goes on to rebuke Marxism for no longer having any answers, and follows up with: 'the point about consumerism is that people are getting something out of it'[84] even if it consists of illusions. And in the prescribed postmodern style of the time, Williamson refuses to engage in a direct critique of capitalism, only of its manifestations. And so consumption no longer means the end-point of production, where 'value' has been realised and profit made and then partly invested in further production of commodities for sale, etc. Consumerism is not even a recognisable element of the base and superstructure process, because production as consumption's 'mirror' or 'conditioning' has disappeared from the analysis. The market—as bringer of choice—is implicitly, in Williamson's scant reference to the term, akin to Milton Friedman's understanding of it: as the precondition for individual freedom.[85] With the eliding of the role of capitalism and the logic of commodity production as the bases for the analysis of the consumer society, the consumer society necessarily becomes the cultural expression of a world with no relations of production and no historicity. Culture is all bricolage, choice and mouldable identity. A

chief 'victory' for many such theorists is that culture has been freed from the standardisation of Fordism and thus consumer society enables the individual to freely 'self-constitute' in whatever way they please, albeit within a 'depoliticised' and marketised culture. With the disappearance of historical materialism from the cultural studies analytical frame—vanished along with the function of technology in the process—what also disappears in Williamson and du Gay is the possibility of an actually alternative way of thinking and of being.

In the final sentences of 'The Culture Industry' Adorno and Horkheimer deliver the last hammer-blow of the negative dialectic upon cultural production and consumption. In what reads as a stark and unsparing coda to a bleak and relentless critique, they describe what they see as the victims' own terrible knowledge of the logic that is at the heart of the 'mass deception' that capitalism perpetrates by means of commodification:

> The most intimate reactions of human beings have been so thoroughly reified that the idea of anything specific to themselves now persists only as an utterly abstract notion: personality scarcely signifies anything more than shining white teeth and freedom from body odour and emotions. The triumph of advertising in the culture industry is that consumers feel compelled to buy and use its products even though they see through them.[86]

Adorno and Horkheimer touch upon a deep-seated feeling of lack, specific to each of us, that recognises the truth of the deception. But it is a truth repressed and sublimated, because another truth is that we know (or feel) there is nothing we can do about it. So 'thoroughly reified' are we that repression or sublimation is replaced by a contingent and evanescent desire or craving that is generated and given material or immaterial form by advertising, and which occupies our consciousness as the subject and object of what stands for personal fulfilment in life within capitalism. Adorno and Horkheimer's essay does not belong in the cultural studies canon. But it is there—to be dismissed as extreme, pessimistic, deterministic, or undermining of a form of Marxism that is unable to accept what their essay shows: that through mass advertising and commercialism, the nature of the commodity (and therefore capitalism) has changed—and has changed in a way that obviates, or makes impossible, the traditional 'revolutionary' road towards a socialist or communist society.

To close this part I will briefly consider the last major twentieth-century philosopher of the commodity and culture conjunction, Jean Baudrillard. Like Adorno and Horkheimer, he is recognised in the cultural studies canon, but does not belong either to it or to its ghetto. He acknowledges the catastrophe that consumerism has wrought upon culture and politics, but refuses to sublimate the knowledge, and so belongs with the Frankfurt School philosophers and also with Fredric Jameson somewhere outside the semi-celebratory

mainstream. His work is also an important crossover into digitality, a point I will develop soon.

In his early works, and following McLuhan and Debord, Baudrillard acknowledges the profound power of the electronic image. His innovation on this theme was to conceive of the shift from the power of production within capitalism as reality's materialist base in society, to the power of production of simulation or simulacra.[87] The image, or the sign, has become the primary exchange value. As Doug Kellner explains, for Baudrillard, 'commodities are not merely to be characterised by use-value and exchange value … but sign-value—the expression and mark of style, prestige, luxury, power, and so on—becomes an increasingly important part of the commodity and consumption.'[88] Three major effects upon the production and nature of culture flow from this idea. First is that the electronic image vastly increases the power and reach of the commodity-sign. It can colonise time and space and the consciousness of the individual (as consumer) far more readily than the material object. Second, the commodity-sign as simulation or simulacrum is an illusion and therefore constitutes a new level of disconnect from the material and objectively real. And third, for Baudrillard, the growing importance of sign-value undermines the analytical value of both political economy and the base and superstructure theories that are based on historical-material assumptions of how capitalism functions. In other words, sign-capitalism has replaced nineteenth-century commodity-capitalism, and therefore immeasurably enhances the alienative power of capitalism. In *The Consumer Society*, first written in French in 1970, Baudrillard claims that:

> We may … suggest that the age of consumption, being the historical culmination of the whole process of accelerated productivity under the sign of capital, is also the age of radical alienation. Commodity logic has become generalised and today governs not only labour processes and material products, but the whole of culture, sexuality, and human relations, including even fantasies and individual drives. Everything is taken over by that logic, not only in the sense that all functions and needs are objectivised and manipulated in terms of profit, but in the deeper sense in which everything is spectacularized or, in other words, evoked, provoked and orchestrated into signs, consumables and models.[89]

In their related but differing ways, the searching and penetrative critiques of Adorno and Horkheimer, Jameson and Baudrillard on the conjunctions between capital, consumption and culture teach us much about the process. Only Jameson is hopeful, however, about the chances for 'any meaningful Marxist intervention in contemporary culture.'[90] The Frankfurt scholars radically modified their Marxism and Baudrillard eventually abandoned his. What unites them, however, is the lingering spectre of alienation—the human effect of technology that has always been capitalism's ace of spades. It is an effect that

Raymond Williams took insufficient cognisance of in his almost bucolic painting of the constitution of culture, where culture, as 'ordinary', could somehow be made common and democratic through almost the innate integrity that he believed exists inside 'ordinary' people 'to know what is best and to do what is good'[91]—and to take humanity to a better place. These views on consumer culture, Williams's included, are not the only writings on the conjuncture, of course. But they are in my view the most original and perceptive. However, they also leave us at an impasse. Their work is pre-digital and apart from Baudrillard none of it provides solid analytical ground any longer, because the ground has shifted so radically from analogue to digital. To find a way through we need some constancy. And alienation is the constancy in the relationship with capital from analogue to digital. In Marx, and underpinning the theories just discussed, alienation is estrangement from the products of one's labour. However, digitality and its logic of automation have alienated humans not only from commodities for exchange, but also from the analogue technology that made humans who and what they are. It alienates us from a natural environment and a physical world that disappears as we enter the virtual.

In the final part I will describe in outline the cultural condition of this double-alienation through digitality. In doing so, I don't presume to offer any solutions to this condition, still less to have furnished any of the most vital questions. It is, rather, to *state where we are* in relation to this unique technology. It is to position my overall theory as nothing more than a point of insight (from a place of alienation) into a technology we currently do not recognise because the orientation toward automation at the centre of digital logic purposively prevents us from engaging with it in a way that we can understand and which has proportionality and equivalence to our human-scaled capacities.

Notes

[1] Examples of a capacious approach to the subject of 'digital culture' we find in Mark Deuze (2006) 'Participation, Remediation, Bricolage: Considering Principal Components of a Digital Culture', in: *The Information Society* 22(2), 63–75; Rob Wilkie (2011) *The Digital Condition: Class and Culture in the Information Network*. New York: Fordham University Press; and John Gorham-Palfrey and Urs Gasser (2008) *Born Digital: Understanding the First Generation of Digital Natives*. New York: Basic Books.

[2] Lev Manovich (2001) *The Language of New Media*. Cambridge, Mass.: MIT Press, p.43.

[3] Ibid., p.64.

[4] Ibid.

[5] Ibid. pp.64 & 96.

[6] J. C. R. Licklider (1960) 'Man–computer symbiosis', *IRE Transactions on Human Factors in Electronics* 1 (March), 4–11.

[7] Ibid., p.4
[8] Manovich, *The Language of New Media*, pp.83–84.
[9] Raymond Williams (1976) *Keywords*. Oxford: Oxford University Press, p.xxvi
[10] Manovich, *The Language of New Media*, pp.97–98.
[11] Bernard Stiegler (2009) 'Teleologics of the Snail: The Errant Self Wired to a WiMax Network', *Theory, Culture & Society* 26(2–3) (March/May), 33–45, p.35.
[12] Ibid., p.40.
[13] Ibid., p.38.
[14] Ibid., p.36.
[15] Ibid.
[16] Ibid., p.41.
[17] Ibid., p.42.
[18] Ibid.
[19] Sarah Phillips (2007) 'A Brief History of Facebook' *The Guardian Online,* 25 July. https://www.theguardian.com/technology/2007/jul/25/media.newmedia
[20] See Jaron Lanier (2018) *Ten Arguments for Deleting your Social Media Accounts Right Now*. London: The Bodley Head.
[21] Timothy Snyder (2017) *On Tyranny: Twenty Lessons from The Twentieth Century*. London: The Bodley Head, p.71.
[22] See, for example, David Frisby's (1985) 'Georg Simmel: First Sociologist of Modernity', *Theory, Culture and Society* 2(3), 49–67.
[23] Georg Simmel (1971) *Individuality and Social Forms*. Chicago: University of Chicago Press, p.376.
[24] Pierre Bourdieu (1984) *Distinction: A Social Critique of the Judgment of Taste*. Cambridge, Mass.: Harvard University Press, p.2 and *passim*.
[25] Karl Marx (1994) 'A Preface to the Critique of Political Economy', *Selected Writings*. Lawrence H. Simon (ed.). Indianapolis: Hackett Publishing Company, p.211.
[26] Raymond Williams (1989/1958) 'Culture is Ordinary' in *Resources of Hope: Culture, Democracy, Socialism*, Robin Gable (ed.). London: Verso, pp. 92, 93 & 92.
[27] Ibid., p.96.
[28] Ibid., p.93.
[29] Ibid.
[30] Raymond Williams (1973) 'Base and Superstructure in Marxist Cultural Theory', *New Left Review* 82, November-December, p.3.
[31] Ibid., p.6.
[32] Ibid.
[33] Perry Anderson (1976) 'The Antinomies of Antonio Gramsci', *New Left Review* 1/100 October-December, 5–77.
[34] Williams, 'Base and Superstructure in Marxist Cultural Theory', p.6.

[35] Ibid., p.8
[36] The 2008 financial crisis has dented this particular common-sense idea. A 2016 Harvard University survey found that a majority of millennials were sceptical of capitalism. However, the *Washington Post* article which printed the results also said that 'A subsequent survey that included people of all ages found that somewhat older Americans also are sceptical of capitalism. Only among respondents at least 50 years old was the majority in support of capitalism.' See Max Ehrenfreud (2016) 'A majority of millennials now reject capitalism, poll shows', *Washington Post*, April 26th. https://www.washingtonpost.com/news/wonk/wp/2016/04/26/a-majority-of-millennials-now-reject-capitalism-poll-shows/?utm_term=.21c730432742
[37] Terry Eagleton (1991) *Ideology: An Introduction*. London: Verso, p.116.
[38] Ibid.
[39] Régis Debray (2007) 'Socialism: A Life-Cycle', *New Left Review* 46 (July–August), 5–17, p.5.
[40] Christian Fuchs (2017) 'Raymond Williams' communicative materialism', *European Journal of Cultural Studies* 20(6), 744–762.
[41] Ibid., p.754.
[42] Ibid., p.750.
[43] Climate Home News (2017) '"Tsunami of data" could consume one fifth of global electricity by 2025' *The Guardian Online*, 11th December: https://www.theguardian.com/environment/2017/dec/11/tsunami-of-data-could-consume-fifth-global-electricity-by-2025
[44] Fuchs, 'Raymond Williams', p.745.
[45] Williams, 'Culture is Ordinary', pp.7–8.
[46] E. P. Thompson (1993) *Customs in Common*. London: Penguin Books, pp.4–5.
[47] Ibid., p.469.
[48] Eric Hobsbawm (1992) *The Age of Revolution*. London: Weidenfeld and Nicholson, p.273.
[49] Ibid., p.275.
[50] Ibid.
[51] Williams, 'Base and Superstructure in Marxist Cultural Theory', p.7.
[52] Glenn Adamson (2018) 'Material Intelligence', *Aeon* https://aeon.co/essays/do-you-know-your-stuff-the-ethics-of-the-material-world
[53] Ian Glover and Peter Grant (2000) *Digital Communications*. London: Prentice Hall, p.2.
[54] Walter Ong (1983) *Orality and Literacy: The Technologizing of the Word*. London: Routledge.
[55] Williams, 'Culture is Ordinary', p.93.
[56] Williams, 'Base and Superstructure in Marxist Cultural Theory', p.6.
[57] Theodor Adorno and Max Horkheimer (1986) 'The Culture Industry: Enlightenment as Mass Deception' in *Dialectic of Enlightenment*. John Cumming (trans.). London: Verso.

[58] Ibid., p.120 and 133.
[59] Ibid., p.158.
[60] Jameson, 'Reification and Utopia in Mass Culture' *Op. Cit.*, p. 139.
[61] Vance Packard (1968) *The Waste Makers*. Philadelphia: David McKay Publications, pp.109 & 33.
[62] Jean-François Lyotard (1979) *The Postmodern Condition: A Report on Knowledge*. Manchester: Manchester University Press, p.xvi.
[63] Guy Debord (1988) *Comments on the Society of the Spectacle*. London: Verso, p.16.
[64] See Banksy (2005) *Wall and Piece*. London: Century.
[65] Cited in Claire Gilman (1997) 'Asger Jorn's Avant-Garde Archives', *October* (79) (Winter), 32–48, p.41.
[66] Adam Weishaupt (2011) *The Revolt of the Spectacular Society*. Hyperreality Books.
[67] Herbert Marcuse (1991) *One-Dimensional Man*. Boston: Beacon Press, p.238.
[68] Ibid., pp.256–257. Interestingly, some recent revision of Marcuse's *One-Dimensional Man* argues that his focus on art, as the quintessentially subjective intellectual practice, was in fact a form of bourgeois individualism and was, as Oliver Nachtwey argues, 'an important source of neoliberal collusion'. See his (2018) *Germany's Hidden Crisis: Social Decline in the Heart of Europe,* Loren Balhorn and David Fernbach (trans.). London: Verso., p.70.
[69] A good example is Simon During (ed.) (1993) *The Cultural Studies Reader*. New York: Routledge, 1993. This has essays from the cultural studies heavyweights, such as Stuart Hall and Dick Hebdige—but also, rather ironically, Adorno and Horkheimer's 'The Culture Industry'. I know from experience as a 1990s PhD student in cultural studies that this collection was one that no student could be without—and would not cite liberally.
[70] Stuart Hall (1984) 'The Culture Gap', *Marxism Today*, January, 18–22, p.21
[71] Steve Lohr (1988) 'A Magazine Reflects a Shift in the British Left', *New York Times,* April 25 p.22.
[72] Ali Rattansi (2014) 'Zygmunt Bauman: an Adorno for 'liquid modern' times?', *The Sociological Review* 62(4), November.
[73] Zygmunt Bauman (1991) *Modernity and Ambivalence*. Cambridge: Polity, p.262.
[74] Judith Butler (1998) 'Merely Cultural', *New Left Review*, 1/227, January-February, 33–44, p.33.
[75] Jameson, 'Reification and Utopia in Mass Culture', p.147.
[76] Ibid., p.148.
[77] Judith Williamson *Consuming Passions: The Dynamics of Popular Culture*. London: Marion Boyars.
[78] Ibid., p.12.
[79] Ibid., p.91.
[80] Paul du Gay et al. (1997) *Doing Cultural Studies: The Story of the Sony Walkman*. London: Sage.

[81] Paul du Gay (1996) *Consumption and Identity at Work*. New York: Sage, p.87. du Gay would later decamp to the Copenhagen Business School.
[82] Ibid., p.87.
[83] 'schizoid' is how David Harvey (through Terry Eagleton) terms Sherman's work in (1990) *The Condition of Postmodernity*. Oxford: Blackwell, p.7.
[84] Ibid., pp.230–231.
[85] Milton Friedman (1962) *Capitalism and Freedom*. Chicago: University of Chicago Press.
[86] Adorno and Horkheimer, 'The Culture Industry', p.167.
[87] Jean Baudrillard (1981) *For a Critique of the Political Economy of the Sign*. St. Louis: Telos Press.
[88] Doug Kellner (2015) 'Jean Baudrillard', *The Stanford Encyclopedia of Philosophy* (Winter Edition), Edward N. Zalta (ed.), https://plato.stanford.edu/archives/win2015/entries/baudrillard/.
[89] Jean Baudrillard (2017) *The Consumer Society: Myths and Structures*. London: Sage, p.206.
[90] Jameson, 'Reification and Utopia in Mass Culture', p. 148.
[91] Williams, 'Culture is Ordinary', p.95.

CHAPTER 7

Digital Alienation

> The inevitable failure of our own lives to match up to the digital Ideal is one of the motors of capitalism's worker-consumer passivity, the docile pursuit of what will always be elusive, a world free of fissures and discontinuities.[1]
>
> Mark Fisher, *K-Punk* (2018) p.130.

Academic jargon and common language have not yet caught up with many aspects of digitality in order to denote or describe them. This is partly because we still need to recognise the extent of the new and then develop the requisite concepts needed to try to explain it. This is a problem. How, for example, to name what digitality does to culture? How does it produce culture? How do we consume it? What, precisely, is the 'connection' between you and me and the virtual network that pervades our physical world by means of digital bit-streams that colonise our consciousness through the ubiquity and relentlessness of its commercial message? Does the term 'connection', with its association with physical or in some way contiguous linkages, even fit in this new context? An analogue connection we can recognise through forms of contiguity, but what of digital's 'discontinuity', as R. W. Gerard put it at the Macy Conference? Or even more difficult, what of networked automation where, as networked computers become more sophisticated, automation itself becomes automatic—where there is no human 'at the very beginning and the very end' of a process as Norbert Wiener reasoned there must be if we are to remain in control of the process? If digitality's critical functions are difficult to denote, then it may be useful to think about what these functions are not. From there we can consider what this cleared conceptual space provides by way of an opportunity to, if not denote accurately and describe fully, then at least acknowledge that there is work to be done concerning digitality's effects, and accept that some old assumptions regarding the basic tenets of political economy need to be rethought for new times.

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If the ideas of 'dissociation' and 'double-alienation' are brought into the analytical frame, then 'production' can't be said to describe what we (and computers) 'do' when digitality makes possible the aggregation of data—which is the mainstay function of the web, and of the growing digital ecology. In what sense do we 'produce' when digital technology ensures that we don't even have to be aware that we are 'producing' the data that is being harvested, almost constantly, if we carry a smartphone? As digitality becomes more sophisticated and pervasive, we don't even have to possess a smartphone or laptop. Indeed, we don't even need to be born: a foetal scan will produce data that 'can never be retracted. They will be available to third parties and there is no telling how they will be used.'[2] A bank account with a cash-card will tell a lot about us—what we buy, where we go, how much income we have, how much debt we carry, etc. And as we walk down the street or enter a public building, facial recognition software can do it too, matching our features and our GPS coordinates with a passport or driver's licence photo that has our residential address and other information accompanying it.[3] Such forms of 'production' are sources of accumulation, yet it is not necessary for us to be consciously part of the process. In terms of political economy and the formation of culture, this is something that we have hardly begun to think through.

Moreover, if we don't 'produce' or are not part of a growing element of the productive forces of society in ways that Marx or even Baudrillard would recognise, then surely we cannot be said to 'consume' in the same ways either? We clearly 'do' something in the service of the data corporations that allows them to make profits, but 'consumption' with its associations of materiality and of the human-scaled recognition that stemmed from the analogue-based processes of the production-consumption cycle, simply does not capture this new process from a new category of technology. Of course, we still act as traditional consumers in much of daily life when we buy material things. However, within digitality much of what we face is, or appears to be, free. For corporations to be profitable, we not only have to produce, but also consume. But where, exactly, is the act of consumption online? It seems to be connected to what we still call production, but this has been incorporated, lazily, into what is today called 'prosumption', a futurist and business-studies concept that does not really explain much at all.[4] Perhaps Marx gives the closest approximation here when he writes about the *conditioning effect* of capitalism's productive forces upon individual consciousness.[5] But we need to be more precise and questioning, and we need to rethink these industrial age assumptions that we have so unreflectively grafted on to a new context. This is especially so if we want to understand how culture is formed through digitality.

If we are questioning the role and functioning of production and consumption in the context of digitality, then we are bound to do the same in relation to the idea of base and superstructure. And similarly, the 'connection' between the productive base and its superstructural society in the context of digitality is no longer clear. The interpenetration between the two that Raymond Williams

saw functioning as a 'totality' now seems problematic also. Williams posited separate spheres that interpenetrate and mutually constitute each other. But, again, within digitality, what is 'base' and what is 'superstructure' is not easily recognised. Jean Baudrillard tries to move away from the binary altogether by suggesting that in the society of the image it is all 'superstructure' and it is here where the illusions of the real are generated in the production and consumption of the electronic image.[6] Baudrillard has been accused of being too 'consumptionist' whereas Marx is often deemed too 'productionist'.[7] But in his *Symbolic Exchange and Death*, Baudrillard gets us close to something interesting that I will develop shortly. He does this in a critique of a few crucial lines of Marx in the *Grundrisse* where Marx writes that in the industrial process of production man 'steps to the side of the production process instead of being its chief actor'.[8] For Baudrillard, Marx betrays 'an innocence of machines', so that if one draws out the logic of his arguments in *Capital* and *Grundrisse*, then he (Marx) 'goes well beyond political economy and its critique, since it literally signifies that it is no longer a matter of a production process, but of a process of exclusion and relegation'.[9] Marx's purported signalling of the end of his own political economy through his underestimation of technology is therefore for Baudrillard the death-knell for the project of Marxism in the age of the electronic image:

> when production attains … circularity and turns in on itself, it loses every objective determination. … Simultaneously, when this sphere of signs (including the media, information, etc.) ceases to be a specific sphere for representing the unity of the global process of capital, then we must not only say with Marx that 'the production process has ceased to be a labour process', but that 'the process of capital itself has ceased to be a production process'.[10]

Whether Baudrillard misreads or selectively quotes Marx must remain an open question here, but Marx does go on to write that this stepping aside enables in the worker a form of 'mastery' over 'his own general productive power', his 'understanding of nature', but that the 'theft of alien labour time, on which the *present* wealth is based, appears a miserable foundation in the face of this new one, created by large-scale industry itself'.[11] Marx is clearly suggesting this 'mastery' will come in a future unalienated society, and not one under capitalism. Still, Baudrillard's point of 'exclusion and relegation' is useful, if we put aside that the terms suggest two slightly different things. And this brings us back to the double-alienation concept I described earlier through the work of Rahel Jaeggi.[12]

The fundamentals bear restating: digitality *breaks* with the logic and relationship of mutual constitution, of flow and of continuity and contiguity, that humans have forged with technology ever since our evolutionary drift toward being tool-making and tool-using creatures. This break constitutes an

historically unique double-alienation: from our relationship with analogue technology and from the natural environment that supplied the analogues from which our earliest tools were made, and from the bond, the 'circle of action', that was formed from their mutual interaction.[13] Like the natural world, technologies surround us. But through digitality our relationship with them is transformed. So, too, then, is the relationship with the processes of 'production' and 'consumption' and 'base' and 'superstructure'. The process of digital rupture effects an alienation, but of a new kind, and Jaeggi's concept of a 'relation of relationlessness' captures it well. Objectively, it is impossible *not* to have a relationship with our digital tools and our virtual environment, but because these are so antithetical to our analogue essence, the relationship is one that is effectively meaningless, given our inability to understand or relate to digital as we could with the analogue that had formed our species. It is a form of alienation, as Jaeggi puts it, that suffers from a 'loss of meaningful involvement in the world'.[14] It is important to understand also that in this alienation, its 'relation' being one of 'relationlessness' means that it takes a particular and nuanced socio-technical and ontological form. It is *relationless* in that it is 'the loss of a relation'[15] to one that contains little or no mutuality in the McLuhanesque sense of an ongoing dialectic where 'we become what we behold ... we shape our tools and afterwards our tools shape us'.[16] Digitality is nothing without humans, yet at the same time its logic of automation and the in-built need to excise human participation from its operations that is its corollary, is what makes it what it is and gives it its power. It is a relation of domination—'the power of the distant' as Stiegler phrased it, but of a specific kind.[17] Again Jaeggi's theory provides a useful insight into the condition as it applies to digitality, describing also a new expression of technological determinism emanating from the digital sphere: 'What we are alienated from', she writes:

> is always *at once alien and our own*. In alienated relations we appear to be … both victims and perpetrators. Someone who becomes alienated in or through a role at the same time plays this role *herself*; someone who is led by alien desires at the same time *has* those desires—and we would fail to recognise the complexity of the situation if we were to speak here simply of internalised compulsion or psychological manipulation. Social institutions that confront us as rigid and alien are at the same time created by us. In such a case we are not—and this is what is specific to the diagnosis of alienation—master over what we (collectively) do.[18]

Jaeggi defines this lack of mastery as *heteronomy*—a state of 'having one's properties determined by an other—and the complete absence of essential properties or purposes'. It is an absence that creates 'relationlessness'; and it is an absence of a relation with technology and the skills of using and comprehending it in ways that correspond with our evolutionary essence. In the time-space of digitality this ontological component is replaced by an increasingly

autonomous and automatic machine logic that we recognise with difficulty and with meanings (expressed as machine-purposivity) that are pre-coded into it as instrumentality.

Digitality we can see in this context functioning as a self-contained sphere, one created by us, but one increasingly autonomous from us—a digitality that is 'alien and our own'. Its alienness directs itself towards us, and in our relative powerlessness we internalise its purpose (coded as capitalism's needs) as our own—in a deeper and more comprehensive way than ever before. At the global scale, and with a present-day sophistication that is surely still only embryonic, digitality functions as the base and superstructure and the production and consumption processes rolled into a vast digitally-connected, algorithmically-collected and instrumentally-directed sphere of information. Culture comes from this. But it is culture that corresponds not to human needs and innate human diversity in the formation of culture, but to capitalism's needs and the limitations that it places upon the forms of culture that are possible.

Monotony Culture

Computing and capitalism mutually interpenetrate and reconstitute each other as one—as digitality. Within this sphere, three main components combine to express the logic that shapes digital culture. These are: commodification, instrumentalisation, and time-space compression. In brief we can say that: *commodification* operates dynamically within a neoliberal market system and is afforded the widest latitude to create the basis for a culture that is almost wholly commercial; *instrumentalisation* algorithmically shapes the culture's forms as an instrument of purpose, where conscious action and choice in the construction of culture are replaced by algorithmic choice that functions automatically; and *time-space compression*, driven by competition within and between the culture industries, means that the turnover rate at which cultural signs and symbols are marketised and distributed is increasingly accelerated, thus creating a logic where cultural forms are marked by an inherent lack of originality or innovation, and where instead culture 'eats its tail', to employ a phrase by Charles Babbage referring to the way computer algorithms function. These principles form the basis, the breadth, and the boundaries of what digital culture can be—and what it can't.

Digital culture is mass culture. It occupies the attention and consciousness of billions in what is essentially a zero-sum game against the physical world, because if you are online then the physical world disappears or is sublimated to some degree. We see the virtual manifest as cultural in social media, in film, in fashion, in music; it also permeates politics, ideas, literature and so on. These seemingly diverse realms converge in the digital sphere as aggregations of information that circulate in countless combinations to suit different markets, or they are experimented with by data aggregators in the hoped-for creation

of new markets. For example, think of the current craze for 'real-life' podcasts that can mix true-crime with politics, or ethics with celebrity, etc. These are mostly freely downloadable but are sponsored by whomever their makers can convince to sponsor them, thereby inserting the cash nexus into the heart of the experience. And with a predicted 15 billion hours of attention being soaked up by podcasts in the US alone by 2021, sponsors flock to those formats and themes that prove most successful—often made so through algorithmically-driven features such as recommendations, trending, likes, and so on.[19] Digital culture acts as the engine of demand for capitalism's material commodities, too, such as cinema tickets, clothes, computers, shoes, cars, home-furnishings, books, smartphones, real-estate, and so forth. The virtual and physical combine, but the virtual sets the parameters through the particular imperatives of a dominant digital capitalism. The result is a digitally-created culture that is mass and global-scaled, is restricted in its possible forms, and is subject to endless recycling of its forms in order to synchronise with capitalism's ever-shortening time-frames. All this is 'culture' only in name. Raymond Williams, let us recall, spoke of a defining feature of culture as being 'always both traditional and creative'.[20] However, digital culture is not and cannot be either traditional or creative. It is the social expression of mass alienation and therefore constitutes a *crisis* of cultural forms that is due to both the nature of digital technology and the needs of capital accumulation.

Let us look at the components of crisis in some more detail. The first component we see in the limitless excess of commodified signs that are injected into wherever there is a 'connection' through which digital networks reach us. Excess normally diminishes the value of a commodity, even a commodity-sign. And as Nicholas Mellamphy argues, within the digital network there is 'permanent excess: excessive downloads, excessive connections, excessive proximity, excessive "friends", excessive "contacts", excessive speeds and excessive amounts of information'.[21] However this matters little when digital replication costs are negligible. And so exchange value can still be realised as profit when, driven by competition, the culture industries flood the virtual world with sign values. The sign that is freighted with exchange value can reach to almost anywhere through ever-increasing means of delivery—be it a screen positioned at eye-level on a urinal stall advertising online betting, or directly into your ears when your podcast listening is strategically interrupted by messages about home insurance. In this sense, cultural production is like a 24/7 exercise in crudely targeted phishing. With the attention of millions caught within the driftnet of sign values, the law of probability ensures that some will move from attention to purchase. But it is more than that: simply to be within the realm of attention is still to be 'captured'. This is because within digitality, captured attention is an aspect of our alienation. And so within the digital sphere, whether buying or not, we exist in an ocean of signs—to become either immobilised by too much choice or oppressed by our 'indifference' to that which is 'at once alien and our own'.[22]

The second component is the instrumental logic operating within digitality. This generates forms of culture that are shallow and confined within an algorithmically-narrowed scope. The hegemony wielded by a handful of data corporations does not mean that they have the capacity to be innovative and expansive in their role as aggregators and disseminators of 'what is best and what is good', as Raymond Williams put it. Their business model has an inherently negative effect on creativity and innovation. The combination of monopoly capitalism and privatised algorithms generates this negativity. The idea that monopoly capitalism stifles innovation is a mantra beloved by neoliberals more than most. In fact Milton Friedman thought a government monopoly to be a 'lesser evil' than a market one.[23] And for almost half a century the trend toward market deregulation has been pronounced. However, hardly anywhere have governments been proactive in respect of the regulation of the tech-sector monopolies that have arisen since the 1980s.[24] Such new industries are *liable* to become monopolies, primarily because legislators and the wider marketplace don't figure out their potential for monopoly until they have become too big, and by then it is too late: witness Microsoft's monopoly of the computer standard operating system through its Windows software in the 1980s. For a generation this market advantage put them in a dominant position, until the mid-2000s when Apple's Mac OS forced its way into the market to create the present duopoly.

For their part Facebook and Google monopolise the data industry and make it very difficult for competition to threaten them. Acting as 'super-monopolies' they simply buy up would-be rivals, patents and intellectual property where necessary. The corollary is that they need only concentrate on business innovation that will increase user engagement, with the form of technological innovation following the function of this imperative.[25] If Facebook and Google's business model is concerned centrally with growing user engagement, then monetising user content by selling it as user profiles to advertisers is where they realise the exchange value of data. This is where the algorithm comes in. And this is where the data monopolies direct much of their immense R&D budgets.[26] Human bias is inherent in algorithms. They are mathematical lines of humanly-written code that direct the computer through specific steps toward specific goals. The steps and goals are inherently instrumental, with the objective being to manipulate user data in order to manipulate the web activity of the users who provide it. In terms of the argument about data corporations being the source of much cultural practice today, a certain logic follows from the algorithm's central role: if the business purports to be building 'communities' in positive ways, as Facebook avers, or if it provides access to the world's knowledge and information through connectivity, as Google claims, then these practices must also be the source of much of Williams's 'common meanings' that constitute culture within our digital lives. However, the forms of cultural practice emerging from what is essentially a process of technological determinism necessarily reflect the biased and instrumental logic of the algorithms that produce them. And it follows that

if Facebook and Google stifle innovation though their respective monopolies, then the forms of culture that develop from our interactions with them will reflect this imperative—i.e. they will be restrictive, culturally repressive, and 'one-dimensional' because of the orientation toward the programmed needs of the algorithm. How does this work in practice?

Earlier I described the emergence of Web 2.0 around 2004 and how it rescued the commercial internet for capital. The use of cookies and tracking software are vital functions for business, but these are the kind of things businesses don't like to advertise. For tech entrepreneur Tim O'Reilly, coiner of the Web 2.0 buzzword, a friendlier web with a 'new architecture for participation' through the web's 'collective intelligence' was a useful way to mask the real function of the web experience. 'Participation' sounds, and is supposed to sound, faintly democratic, but in Web 2.0, 'participation' was of a kind slanted toward the data harvesting strategies that Amazon and Google had already been experimenting with in conjunction with cookies and tracking software.[27] Ostensibly, Web 2.0 was to be an enhanced focus on 'participation' through such functions as Amazon's 'recommendations', or Google's PageRank algorithm, or Facebook's immensely successful 'like' button. And we see it more widely across the web in Netflix's 'if you liked … you might like…', or in Twitter's 'trending' list, or in the 'most viewed' or 'top ten stories' clickable lists that now appear as standard on countless news sites. Generating data is the sole objective here, with 'participation' serving merely an ideological role. As Andrejevic and Burdon put it: 'These days we generate more than we participate'.[28] Proprietary algorithms do the work of giving the collected data pre-coded monetisable shape by deciding whether user activity is 'relevant' to its own aggregating and profiling activity. The ideological spin on what is effectively a large-scale deception and breach of privacy operation is reflected in the example of Amazon's concept of 'collaborative filtering', where platforms and millions of users 'collaboratively' choose, purchase, rate, or recommend in a process that supposedly forces out the bad and promotes the good—be it a brand of coffee-maker, health advice, a movie, further sources of information, a brand of whisky, where to link to next, and so on.[29] With reference to Google, a 2010 *Wired* magazine article promotes this ideology, attempting to disseminate the positive idea, as Ted Striphas observes, of the search engine's leveraging of 'crowd wisdom' through its PageRank algorithm:

> PageRank has been celebrated as instituting a measure of populism into search engines: the democracy of millions deciding on what to link to on the Web. But Google's engineers … are exploiting another democracy—the hundreds of millions who search on Google, using this huge mass of collected data to bolster its algorithm.[30]

As a journal of the libertarian technocracy, *Wired's* point, of course, is to paint a picture of a virtuous cycle of positivity in such 'collaboration'. And Striphas is

rightly sceptical of what he sees as a particularly neoliberal basis for the generation of what he terms 'algorithmic culture'. He writes that the article:

> makes algorithmic culture sound as if it were the ultimate achievement of democratic public culture. Now anyone with an internet connection gets to have a role in determining 'the best that has been thought and said'.[31]

The words Striphas quotes are from Matthew Arnold, the Victorian educationalist and cultural critic who in 1867 published *Culture and Anarchy* in which he sought to define an educative cultural agenda for Britain, through which all classes would be able to partake in 'the best that has been thought and said'. And Striphas sees something of the Arnoldian patrician in 'algorithmic culture' and imagines that 'companies like Amazon, Google and Facebook are fast becoming, despite their populist rhetoric, the new apostles of culture.'[32]

I'm not so sure. *Wired's* phrase 'people deciding' and Striphas's counter-argument of apostolic prescription are basically arguments for agency and power that come either from the people or from the apostles. However, the major issue is not human, but algorithmic. Striphas charts the sematic shifts of his keywords 'crowd', 'information' and 'algorithm' as combining and orienting towards 'order', especially after the Second World War. People were systematically cut out of the equation at each step of the combining process in cybernetics, information theory and finally business. Today, users don't so much decide with the click of a button or the flick of a finger. And data corporations don't so much care about the content of their datasets. When we 'like' or 'recommend', or when we act on these as nudges to a purchase or to link to another website, what we fundamentally do is supply data—in ways that algorithms encourage. We 'produce' value for the data corporations. And as is the case with physical or intellectual labour in the traditional ways, and in traditional economies, there is little 'choice' involved for most people. At root it is a mixture of economic compunction coupled with the allure of the 'magic' of the computer. Striphas laments the fact that the most sophisticated and powerful AI and machine-learning algorithms are secret, and that we 'can't see under the hood' to see how they really work.[33] This much is true and will be so until the day comes when what Reuben Binns calls 'algorithmic accountability' becomes a civic reality. But reason and logic can nonetheless give insight into how they function today in broad terms. The process is informational and transactional. It's also automatic, with the *algorithm making the decision* in a millisecond. Relevance is decided on the basis, as Binns puts it, 'of algorithmic models trained on large datasets of historical trends. Personalised platforms build detailed profiles of their user's attributes and behaviour, which determine the content they view, the products they see and the search results they receive.'[34] Binns goes on to make things explicitly clear by repeating himself: 'Machine learning involves training models with learning algorithms, using large datasets of relevant past

phenomena … in order to classify or predict future phenomena.'[35] Such logic, he continues, is an example of a 'decision-making system in so far as it derives decision-relevant outputs from given inputs.'[36] His emphasis on the past or historical trends in order to classify is the important point. Automatic machine learning algorithms make choices based upon historical or past information and use these choices to classify our personal digital experience. This means that further (future) experience will be drawn from and conditioned by the past, and then this experience is automatically incorporated into the next phase of work of the algorithms. And on it goes.

If we think about this logic with respect to human culture we can see that since its 'learning' is from 'past phenomena', there can be no evolution or development of culture as it was traditionally understood. Algorithms are historical. And their classificatory logic means that there can be no random interspersing of cultural forms that may throw up mutations that may constitute something actually new or unexpected. The logic is backward-looking and inward-facing. In this way, the web and its burgeoning datasets may be seen as a kind of information whirlpool, spinning centripetally and oriented to self-containment. To paraphrase Adorno and Horkheimer slightly: 'The [culture] machine rotates on the same spot'.[37] The new or unexpected, which must either come from the outside or from random mutations from the inside, cannot evolve because of the supervening action of the algorithm. Algorithmic culture, then, is not a 'collaborative filtering' of users' 'collective intelligence' to produce what is best and what is good. Neither is it apostolic and prescriptive culture from above, as Striphas would have it. It is the algorithmic generation of backward- and inward-looking data reproduced as the basis for commercial strategies. What such logic excludes and alienates are cultural forms and meanings derived from physical and analogue life which contain the human-scale and the ordinariness (in Williams's sense) that can be the basis for expanding and diversifying cultures that evolve from or break from the past—instead of being digital shadows of it.

The third component is time-space compression. It's self-evident but too often we overlook the fact that the word 'culture' derives from the verb *cultivate*. To cultivate is to prepare ground and tend the plants that grow from the seeds planted. Cultivation denotes roots and attachment and stability and cyclicality. In human affairs it can also signify place, such as the culture of a people who are from a certain place. Certainly this is an association that can attenuate as human culture, mediated by new technologies, changes as its communicative realms extend from local, to regional, to national, to international. However, 'experience, contact, and discovery'[38] bring cultures together and sustain them in myriad ways across time and space. They thus function to create cultural histories and traditions, with their specific or general forms of structure and substance, which in endless combination can be the validation of a culture and of the individual and group within it. In pre-digital times this process was an analogue-derived one consisting of tradition, of contingency and evolution—all

as an effect of how people related to time and space. The historically different ways in which the barriers of time and space were mediated (or not) is what gave pre-digital human culture its diversity. Again, we can look to Raymond Williams to express the idea of the space-time of culture in his typically insightful and redolent prose:

> Every human society has its own shape, its own purposes, its own meanings. Every human society expresses these, in institutions, and in arts and learning. The making of a society is the finding of common meanings and directions, and its growth is an active debate and amendment under the pressures of experience, contact, and discovery, writing themselves into the land. The growing society is there, yet it is also made and remade in every individual mind. The making of a mind is … the slow learning of shapes, purposes, and meanings, so that work, observation and communication are possible.[39]

What emerges most of all from these words, and really from his entire essay, is the *human-scale* practice of culture and its human-scaled *temporality*. Williams downplays the roles of capitalism and commodification in 'Culture is Ordinary' because he is seeking to discover the essential essence of culture-making. In this sense the essay may be read as a 'ground zero' expression of culture, just as Adorno and Horkheimer's essay may similarly be seen as the 'ground zero' analysis of culture's commodification. These essays, read in conjunction, can still serve as a powerful analytic tool to help explain the elements of transformation and intensification of culture in the context of digitality.

We have looked at the effects of commodification and instrumentalisation upon the nature of culture within digitality. In summing up I will discuss a particular effect of digital time-space compression—social acceleration—upon the 'purposes and meanings' of mass culture: that it creates a state of *stasis*, a stagnancy, in the mass cultural life-blood, where growth, evolution and change are being forced out in direct proportion to digitality's colonisation of every sphere of society.

In a *Vanity Fair* essay from 2012, Kurt Andersen looks back over the previous twenty years of popular culture and surmises that 'Movies and literature and music have *never changed less* over a 20-year period.'[40] He goes on to try to explain this phenomenon of a culture 'stuck on repeat, consuming the past instead of the new':

> Not coincidentally, it was exactly 20 years ago that Francis Fukuyama published *The End of History,* his influential post-Cold War argument that liberal democracy had triumphed and become the undisputed evolutionary end point toward which every national system was inexorably moving: fundamental political ferment was over and done. Maybe yes, maybe no. But in the arts and entertainment and style realms, this

> bizarre *Groundhog Day* stasis of the last 20 years or so certainly feels like an end of *cultural* history.[41]

Andersen does not really know why this is so. He speculates the cause may reside in the culture itself having become somehow 'postmodern', where lazy artists, architects, television producers and movie makers etc. will simply plunder the past to play *bricolage* with styles and forms. He further speculates that maybe it's a global case of 'nostalgia' where 'new technology has reinforced the nostalgic cultural gaze [and] now that we have instant universal access to every old image and recorded sound, the future has arrived and it's all about dreaming of the past.'[42] Again, no reasoning as to why culture has become seemingly nostalgic. To graphically reinforce his point, Andersen's essay has a cartoon illustration that features a line-up of five males, dressed in a quintessential fashion outfit from the 1930s to the 1990s, in gaps of twenty years. The first three figures (depicting 1932, 1952, and 1972) could hardly be more dissimilar. The first is in a suit, tie and fedora, James Cagney style; the second is a James Dean figure in leather jacket, Levi's, sunglasses and pomaded quiff; and the third is an African-American with wide flares, Afro hairstyle and platform shoes. The remaining two figures (1992 and 2012) look identical in flannel shirt, jeans and sneakers, and with only the iPod earphones distinguishing the most recent from the analogue Sony Walkman from 1992. The 2012 illustration is still everyman today, except perhaps, that the earphones would now be of the wireless kind.

If fashion has stopped changing, then so too has mass culture more broadly, is Andersen's message. However, the lack of the new in mass culture may not mean much to many people. That sons today often dress like their fathers, or daughters like mothers, in an early 1990s way; or that the music they listen to, or the films they watch, might be largely the same, or re-makes, or derivations, gets only the occasional airing in magazines, and usually in a quasi-humorous tone. But culture's growing stasification is an effect of capitalism's growing post-1945 maturation. From the time of Adorno and Horkheimer at least, the idea that culture has been tied to the trajectory of capitalism has been broadly accepted in social theory; the question has really only been one of how deep the commodity logic had penetrated into society. Adorno, writing in *Prisms*, his book of cultural criticism first published in English in 1967, underlines the relationship between capital and culture when he notes 'the primacy of the exchange process' in the production of cultural forms.[43] The exchange process is not the full explanation, of course. It accounts for commodification, but not stasis. For that we need to consider the temporal aspect of capital. It was Marx who first articulated the importance of time in the production of commodities. In *Capital* he wrote about machines, owned by capitalists, as the 'objective means, systematically employed, for squeezing out more labour in a given time'[44]. What this signified, for Marx, is that the worker had lost control of time; it had become abstracted from the time-experience of the worker. It

was alienated from her through the machine, abstracted by the speed of the machine and made calculable by the clock. In other words, time had become money, had become a medium for exchange and exchange value. Efficiency in production, leading to rationalisation, thus became the driving force of production in the early years of capitalism, and with the whole system-logic based essentially upon this alienation of human time.

Efficiency and rationalisation (necessitated by competition) meant in turn that innovation (to make things faster) in machine technology was the only way for the individual industrial capitalist to stay in business. This logic is the basis of Fordism and automation and instigated the revolution in computing. On a much broader scale, efficiency and rationalisation set in historical train a gradual acceleration of the forces of production. And as Fordist capitalism became the dominant mode, and after 1945 especially, individuals within society began to experience time as an accelerating force. According to Hartmut Rosa, this was expressed in the growing sense of increase in the 'pace of social change' and 'the pace of life'.[45] As Adorno and Horkheimer claimed, commodity culture within Fordist capitalism began to be oriented increasingly towards standardisation and sameness. Although the authors didn't emphasise it, this standardisation was an effect of abstracted time exerting its pressure upon the nature of culture. As production in the culture industries got faster and faster, there was less time for non-alienated and human-scale culture and its meanings to be cultivated and expressed naturally through innovation or diversity.[46] Capitalism cannot 'efficiently' register and commodify change in human time. Human time is too slow for the ever-quickening production-consumption cycle. At the same time, pressures of competition in the culture industries drive the imperative always to produce something new—or seemingly new. 1950s pop music, for all its industrialisation and instant commodification, *was* something new. It was, perhaps, the final cultural innovation in modernity, and it stands as historical testament to modernity's attenuating capacity to create new forms—and capitalism's increasing capacity to industrialise them immediately.[47] Growing out of a nascent youth culture in the Anglosphere that was gradually asserting itself after 1945, its forms and meanings evolved through 'cross-cultural contact' in the US that saw the adoption of African-American musical culture as the basic element of the soon-to-be-standardised pop music of the second half of the twentieth century.[48] Cultural industry production must nevertheless *appear* to be new and different, even if it is only in a superficial form. For twentieth-century analogue capitalism this was an ongoing and increasing problem, one that reached its point of cultural crisis in the final quarter of the century. In the 1980s, Fredric Jameson wrote about the nature of the emergent postmodernism in culture (and postmodernity as a cultural era). Jameson was a seminal source here in that he could see postmodernism as an expression of a *temporal* crisis of culture. There was no time for the new to be born authentically and naturally. So artists, architects, writers, movie-producers, playwrights, and so forth, motivated often by a Warholian approach that was partly critique and partly an

embrace, resorted to cultural practices that were oriented towards, and drew from, existing forms in modernity. Pastiche, bricolage, irony, parody and so on thus became the cultural keywords for the creation of something new, when that something was not new at all. In an essay first published in 1983, titled 'Postmodernism and Consumer Society', Jameson argues that through use of such devices, cultural producers 'will no longer be able to invent new styles and worlds—they've already been invented'.[49] Within modernism's corpus, he wrote, 'the most unique [artistic forms] have been thought of already'. Jameson now gets to the crux of the issue in his critique of late-capitalism, and also aims indirectly at Herbert Marcuse who thought he glimpsed salvation in art. Pastiche and the other keyword practices, Jameson argues, signal a postmodern impoverishment:

> in a world in which stylistic innovation is no longer possible, all that is left is to imitate dead styles, to speak through the masks and with the voices of the styles in the imaginary museum. But this means that contemporary or postmodernist art is going to be about art itself in a new kind of way; even more, it means that one of its essential messages will involve the necessary failure of art and the aesthetic, the failure of the new, the imprisonment of the past.[50]

Jameson gives examples from film culture of the time, when 'nostalgia' films began to go mainstream: films 'about the past and about specific generational moments of that past', such as Roman Polanski's *Chinatown* and George Lucas's *American Graffiti*. Such films were already so 'omnipresent', he notes, that their emergence was hardly registered as a shift in cultural production.[51] Jameson gives his theory a heavily Lacanian psychological element, which supposes that, with the postmodern turn, 'Cultural production has been driven back inside the mind … to seek the historical past through our own pop images and stereotypes about that past.'[52] With this 'psychological turn', however, Jameson's theory begins to break down. It does so primarily because he neglects to take political economy through to the core of what was happening within late-capitalism. Jameson's consumer society, he well knows, is also capitalist society. Its cultural production and its resultant shape and form are driven above all else by capitalism's imperatives. With only the past to draw from for its 'new' cultural signs and symbols, cultural producers automatically appropriate it; look to what is ready to hand to make a pastiche, to re-create, to ironise; find whatever else can be brought to bear, to give, consciously or not, the impression of something new, something fresh and something that will stand out from the competition and sell. When something new is needed all the time, the actually new has no time to emerge. Such cultural consumption shapes the living culture, the 'ordinary culture', leaving the seeds of the new to wither or fail to strike roots in the soil, because the soil (society) is made infertile by commodification. Consumer society becomes expressive of that past, and is actually a

prisoner of it, as Jameson argues. But it is so because of the economic imperatives of the late-capitalist production of culture, and not because of any mass psychological need. If anything, consumers born into such a culture adopt the Stockholm syndrome, identify with the products of the stasifying logic of the culture industries, and want, expect and demand its output.

Digitality brings the same economic imperatives as analogue capitalism, but with an accelerated space time that transforms and intensifies the stasification process. But it does so with a twist: cultural production is not caught up in the past, as in Jameson's analysis of late capitalism, but is trapped within a *constant present*, within a network time temporality that effaces any remaining spheres of the human scale in culture that has any connection to capitalism.

In the 1980s this process is already underway. The quantum leap to digital is made increasingly within industrial sectors, and the developed economies of the West stand at the threshold of popular computing with the rise of Microsoft and the broader techno-libertarianism emerging from southern California. Digitality goes from being sectoral-industrial to mass cultural. Through this process of colonisation, the human-scale and human time in cultural production and consumption are being relentlessly driven out. And as the production–consumption cycle tightens, and as social acceleration gathers pace as a consequence, cultural forms and commodities become increasingly narrow, rigid, repetitive and monotonous. As just noted, the time of the network needs to be factored in as a shaping force of the culture of digitality. Network time is the experience of time when in the network. It's time beyond the clock, because the clock is no longer so relevant when one person is located in place A and another is in place B, which may be ten thousand kilometres away. They share the same time, but differing time-zones: the time of the network.[53] All kinds of subjective time experience may be experienced or shared within network time. The 'timescapes'[54] that are created may take many different forms. However, the computer is the supervening power within network time, and with the computer being in service for capitalism, the orientation of the 'timescape' is always towards acceleration, to faster connections, to more of them, to getting rid of latencies and interruptions online, and so on. Through acceleration, and through more and more connections made and sustained through time spent online, the experience of network time becomes one of a present-centred time, a continuing 'now' where one's attention is taken up always by screen-based activity, which is restless activity because the network is engineered specifically to keep you moving, busily active and multifariously connected in the generation of data.

Behind all this networked activity sits the algorithm. Charles Babbage noticed something about this mathematical underpinning of his Analytical Engine as he was drawing it up in the 1830s. The working of the algorithm caused the Engine to 'eat its own tail', by which he meant that, as touched on earlier with Reuben Binns, it would pause during calculation and use the values that it had previously determined to choose between two possible next steps.[55] It

feeds on its history. Babbage also observed that the algorithm *lays down its own railway*, meaning that its path is not only based upon the past, but follows a predetermined and narrow trajectory.[56] Network time combines with algorithmic logic to govern the experience of billions of individuals in their consumption of the production of culture from the culture industries. What this permutation produces in our digitality is different from the straight-out 'automatic succession of standardised operations'[57] that so dismayed Adorno and Horkheimer; and is different from the plundering of the past as a source of pastiche and nostalgia, as Jameson claimed. There is no meaningful past or future in the network, only the digital present. Moreover, the sources for commodity culture production don't come from the collective memory of cultural industry producers who reach back into their own cultural experience for material. This would be bad enough. The cultural material, increasingly, is already in the network, stored or circulated as data or information that can be retrieved at any time to be remade into something 'new' to sell. How does this work in practice? How does the digitally 'new' come into being? And what are its human effects in the consumer culture of digitality?

As I write this, F. Scott Fitzgerald's 1925 novel *The Great Gatsby* is reportedly being re-made by YouTube as a serial for its Premium subscription service.[58] The novel has been re-created for film and television several times before, most recently in 2012, starring Leonardo Di Caprio as the Gatsby character. However, the novel and films and TV series—and now the YouTube streaming version—are not cultural mimesis for an individual or collective reappraisal of a pre-Great Depression US, and the class-culture excesses deriving from a decade of fanatical speculation on Wall Street. Neither do they constitute a reflective and insightful social-psychological study depicting the essential emptiness of materialism in a specific time and place in modernity's evolution in the twentieth century. Such might be the case outside of their digital reproduction and circulation. Inside the technologies of digitality, however, it's simply material that's lying around. And there it exists, invisible to all the senses, as binary code written onto proprietary master-copies on secure servers, or on pay-to-view subscription servers, on individual hard-drives on smartphones, on pirate websites around the web, and so on. It is the alienated product of an alienating process. Culturally it is empty; it is information. Culturally, it signifies no history or nostalgia or literature or new exploratory fields in cinematography or screenwriting or acting. Culturally, it is not 'traditional or creative'. It is virtual material that is stored or circulates as bytes of information. And this—along with everything else that has been digitised as the material for our mass cultural world—as if by magic, appears as 'the very ideology that enslaves [us]' as soon as it is manifest on the screen in front of us for us to consume.[59] Such cultural materials' virtuality and ready access ensure their present-centred atemporality. They constitute the signs and symbols of the now, of the instantaneous and the impulsive. But still, we imagine (if we ever consider it) that we control and choose within digital consumer culture. And so *The Great Gatsby* appears on

screens, free, or bootlegged or paid-for, and we can watch, pause, rewind, fast-forward or exit. It's up to us, or so we are told by the libertarians who say this is the free market at work. But to consume this way is still to be 'captured' in the way I described before—we are alienated either through engagement with, or indifference to, what is before our eyes. We are alienated by our immersion in a network-induced constant present. The time of the digital machine is something approaching real-time, and it holds us there, suspended, and disconnected from the technology itself, from our immediate surroundings, from other people, and from nature. And so digitality repeats and remakes. If it sells, so much to the good. It also creates the 'new' from non-stop derivations from what is lying around in the form of formats and genres and clichés from which any number of permutations are possible. This is all we can expect, because it is all that the digital network and its digital products are capable of, because human time and the human-scale of culture has been driven out by digital speed.

Other spheres of culture exist, of course. And they are of the type and quality that Raymond Williams would recognise as 'ordinary' and essentially human and human-scaled. These micro-spheres are everywhere, all around us and every day. Simply talking face-to-face with a friend, lover, colleague, the person who makes your coffee at the café you go to every day is ordinary culture's 'ground zero', or what Emmanuel Levinas said to be the 'irreducible relation' that is the font of not only culture, but ethics, too.[60] They exist in our human and human-scaled connections with families, with institutions of work, in work itself that is not screen-oriented, in reading a book, in sharing a drink, playing sports, going to the cinema, knitting a jumper for a friend, fixing a bike for your son, in almost any *pastime*—to employ a term that is often overlooked for what it signifies. But these are examples not of mass culture, but of remnants of pre-digital forms that are the basis of the 'ordinary' that had sustained humanity for thousands of years, but which began to change and, in many ways, attenuate, as the industrial way of life began to dominate. In our post-industrial era, these micro-spheres exist in the vast shadow of a digitality that every day insinuates itself into these remnants, in the zero-sum game that is time spent with networked technology. This mass sphere is where our relationships with physical people, physical things and the physical environment terminate. We flip to another logic: from analogue to digital, and from the less-than-total alienation of pre-digital capitalism, to its almost total form within the network, in the digital relation of relationlessness that unteaches or does not teach at all what non-digital life can consist of and what non-digital existence can be, in respect of at least the potential for human freedom. Above all, mass digital culture, in its growing pervasiveness and increasing diminution of that which is not digital, means that our innate sense of the human-scale is being lost. This is perhaps the worst effect of digitality, and for two related reasons: first is that politics at the speed of the network, of social media, drives millions of us towards identity politics and thus towards identitarian concerns that tend to find their home online.[61] Second is that our growing online life makes the

most important issue confronting humanity—the climate crisis from global warming—alien and incomprehensible to us as a physical reality and as a political project. The logic of this is not pretty, but neither is our environmental future: our alienated human-scale cannot easily connect with the global-scale consequences of our local-scale activities that capitalism has scaled up to a global and existential crisis.

Conclusions

A Post-Modern Marxism for Our Time (and Space)

In summing up *Postmodernity,* David Harvey draws upon the metaphors of the cracked mirror and its fused edges to stand for how he appraises the conjunction of the postmodern condition. He writes:

> The cracks in the mirror may not be too wide, and the fusions at the edges may not be too striking, but the fact that all are there suggests that the condition of postmodernity is undergoing a subtle evolution, perhaps reaching a point of self-dissolution into something different. But what?
>
> Answers to that cannot be rendered in abstraction from the political—economic forces currently transforming the world of labour, finance, uneven geographical development, and the like.[62]

One may speculate about what Harvey's 'and the like' might consist of, but it certainly wasn't going to be revolutionary technological transformation of economy, culture and society by a new category of technology that would upend the 'basic rule' of accumulation. And this unfolding wasn't to be 'rendered in abstraction' either. The 'something different' would emerge from the deep-laid 'political—economic forces' that he had identified in his book and what these would generate. Beyond this, the challenge that *Postmodernity* took up was *what to make* of these various manifestations in the context of their fundamental drivers.

Such a strong and classical Marxist theoretical framework meant that Harvey was able to be positive throughout *Postmodernity*. However, whilst 'something different' was in the air in 1989, the objective political and economic picture was rather mixed. For example, the Berlin Wall was to fall at the end of that year, but few predicted it and fewer knew to where it might lead. Related to this was the fact that for several years Mikhail Gorbachev had been taking the Soviet Union and its state capitalism through embryonic reforms, but these too were highly unpredictable. For their part, China and India were already embarking upon a serious opening to the West—at least economically; but some

analysts thought that a south and east Asian form of *perestroika* might encourage political reform, especially in China, with a rising middle class agitating for more democracy, and not necessarily of the socialist kind. In the West itself, globalisation was unfolding fast in the context of a Reagan–Thatcher-inspired neoliberalism that saw financialisation generating a consumer boom based upon cheap money and easy access to debt for individuals as well as businesses. But this was accompanied by a growing evisceration of Fordism and the rust-belting of the great industries of working-class organisation in mining, steel, shipbuilding, auto-manufacture, and so on. But then again, the working classes in the Anglosphere, the leading edge of neoliberalisation, were still organised to a surprising degree if looked at from today's perspective.[63] Moreover, since the 1970s the emergence of what were termed 'new social movements' around issues of colour, environmentalism, gender and sexuality appeared to be primed for fusion around a socialist centre if the ideological conjuncture was right.

If the picture was mixed, Harvey brought something new to the 'basic rule' of accumulation that put it in a more positive frame. His spatialised perspective on accumulation revitalised a Marxist political economy that had been running out of ideas within late capitalism. It was a startling thesis. It suggested that there was a fundamental and irresolvable spatial contradiction in the trajectory of accumulation, one that would place an intrinsic limit upon the long-run potential of capitalism itself. Economic and political crisis (for capitalism) would inevitably show itself 'in the fullness of time',[64] and so socialists needed to prepare for when the overripe fruit of accumulation would fall. *Postmodernity* argued that it was fundamental 'political—economic forces' that shaped late-capitalist society, and it was the late capitalist crisis emanating from these forces that had caused the cracks that were then evident. These cracks took ideological and cultural form in the postmodern 'condition' which was the antithesis of the forms of ideological and cultural fusion that had been driven to the edges. Intellectually, this manifest as an eschewal of the idea of progress and the abandonment of any sense of history, and so on. But in art, architecture, literature, film and so forth, the effect of the ideological transformation in cultural production was evident, too.

However, this superstructural froth did not affect the fundamental trajectory of capitalism and its logic of accumulation. For Harvey, the 'basic rule' of accumulation was the same in 1989 as it had been at the time of the rise of a revolutionary and technologically-charged modernity. The 'compression' of space and time continued as it had since the nineteenth century, and it was accelerating, but its main significance was that for all its cultural manifestations, the main driver was economic—the spatial expansion of capital. In the context of the globalisation trajectory of the 1980s and 1990s, Harvey strongly implied that this latest 'spatial fix' of capital accumulation would be the largest in history and perhaps the last. When the whole planet became an integrated capitalism, accumulation would have nowhere else to go. It would then build inexorably to the point where a crisis in the 'short-run solution to the accumulation problem'

could emerge, with 'the least advantaged countries and regions suffering the severest consequences.'[65] At a generalised level, this would signal capitalism's functional dénouement. *Postmodernity* theorised that the cracks and the fusions were held in tension and in dialectical movement—and turning toward a 'self-dissolution into something different'. However, his portentous question 'But what?' would hang like a shadow over his entire oeuvre for the next three decades.

Today, one will look long and hard to find a new book with 'postmodernity' or 'postmodernism' in the title—or even as the subject-matter inside its covers. As the Google Ngram word-frequency viewer shows, 'postmodernity' peaked around 2000 and slipped precipitously afterwards. 'Postmodernism' reached its apex slightly earlier but fell even more steeply in the following years. The decline in the use of these terms did not signal a change in the culture of fragmentation, of incredulity toward metanarratives, of ephemerality, of deconstruction, and so on—of the tropes that Harvey lists as markers of the ideology.[66] Rather, the decline was a reflection of the *success of an ideology*. Far from being in danger of 'self-dissolution', postmodernity had sunk deeply into Western consciousness. Not just in culture—but in economy and society, too. Today we inhabit a real and actual post-modern global economy where post-Fordism and the flexible accumulation it makes possible have been triumphant. And it is paradoxical that this success is due in no small part to the very 'silliness' that Harvey had derided in the writings of Jean-François Lyotard in his uber-perceptive 1979 work *The Postmodern Condition*. Lyotard argued that modernism had changed because 'the technical and social conditions of communication have changed'.[67] The quote is from Harvey, who left it hanging at the end of a paragraph critical of Lyotard, as if nothing could be more absurd and therefore unworthy of further comment. Lyotard predicted a coming 'hegemony of computers' which would impose 'a certain logic' upon society in respect of knowledge and its 'exteriorisation' into databases and networks.[68] This much is now clear. But the 'hegemony of computers' that would become digitality has achieved much more. Networked computers facilitate the flexible accumulation that Harvey described. However, not only did this change our perceptions of time and space, it changed how a great deal of capital was accumulated: the 'basic rule' had been circumvented through a potent combination of virtual space, automation and alienation from a 'hegemony of computers' which also became a hegemony over capitalism's primary mode of production and consumption. At the level of the economic, the modern had become postmodern. And the 'something different' was to change everything, not least Harvey's space economy thesis.

Over more than three decades of intensive and extensive digitality, the cracks in the mirror have become fused and the fused edges have developed multiple cracks. The anticipated 'self-dissolution' of an ideology did not come. Postmodernism has entrenched itself so deeply into society that its ideological essence disappeared into the consciousness of people and the practice of life. Like Williams's culture, postmodernity became part of the 'normal'. This was indeed

'something different' but something a classical/spatialised Marxism could not see because it could not take seriously the revolutionary role of digital technology. And the irony is itself postmodern. The web with its podcasts and YouTube and downloading websites and davidharvey.org has made Harvey the most influential living Marxist intellectual. The 'something different' is technological and is what communicates his voice to millions, yet the song remains the same. For example, a 2017 video debate titled 'Technology and Post-Capitalism' can be found on YouTube and on davidharvey.org.[69] In it, David Harvey and Paul Mason, socialist and journalist, deliberate the question: 'do technologies create new possibilities?' Mason, author of best-selling mainstream books on the connections between new media and politics, talks about the possibilities for socialism and communism in a world where our descendants will no longer have to work because of the fantastic productivity of computer-based machines. People, too, he argues, will become different because of how we communicate online. We will develop a capacity for adopting 'multiple selves' that are the more-or-less deterministic corollary of the multiple modes of communication that digitality affords. However, where this will leave us in respect of the socialist project, when much production is done by machines, and where individuals have developed protean selves, is not clear in Mason's contribution. Harvey, if I can paraphrase his input, argues in terms that would not have been out of place in *Postmodernity*. He begins by saying that neoliberalism is not about the market, but about the consolidation of class power. This is probably true to some extent, but it misses the point of digitality. Continuing, and echoing Wolfgang Streeck, he acknowledges that the working class has been 'destroyed by deindustrialisation' made possible by computerisation and automation (40:30). And relying on Marx, as he always has in questions concerning technology, he argues that the central question is not one of changed ontology, or of determinism, or of social shaping, but simply about who controls it. He concedes that digital technologies have all kinds of 'emancipatory possibilities' (39:26) but it is always in the end a question of power and who holds it. The obvious question to ask here is: if digitality has made obsolete much of the analogue basis of industrial production that formed the working class in a historically and technologically specific way, how are these (now) cracked edges ever going to fuse together when alienation and automation are of a different order from when Marx theorised them—a theorisation that Harvey continues to repeat?

In the fused and solid centre of the mirror, we see only ourselves. It is an alienated 'self' that has no humanising relationship to the invisible data-flows of virtuality and cyberspace that pixilate our screen-companion. Neither do we have a positive relationship to the obscure digital processes that generate them. Increasing preoccupation with this new category of technology means that we have a diminishing relationship to the physical and the analogue when immersed for hours on end within digital representations of immaterial worlds. This digitality creates a heteronymic relationship with users vis-à-vis its pervasive technologies; and as digital technologies become more intensively and

extensively networked, they generate a deterministic force that is much more powerful and far-reaching than a determinism attributable to any single, discrete, non-connected, non-digital tool. In politics, as Bernard Stiegler wrote, digitality forces upon us a 'collective individuation'[70] as human actors; but it is a coercion, as Stiegler also wrote, from which we can gain freedom and agency through cognitive control over the technology's functions—in his case the smartphone. However, networked digitality is too powerful and too unrecognisable (as a technology) for the individual—or even the collective—to stand against. What we now face is a *networked determinism* that was instanced in the Cairo protests of 2011 which led to the catastrophic Arab Spring. A 'collective individuation' of mainly young and tech-savvy protestors managed to topple Mubarak from the Egyptian presidency. But a lack of *real collectivity*, in terms of a coherent political project, meant that sustained political action beyond the short-term was impossible, and this permitted institutional–authoritarian power to reassert itself. The individual and collective relation to digital technology, as a technology of freedom, was shown here to be one that was fundamentally alienatory, both cause and consequence of the failure of users to apprehend human potential, and digitality's frustrating the means of its appropriation.[71]

Such alienation leaves us individuated and vulnerable to the logic, speed, scale and instrumentality of networked digital technology that is almost wholly oriented around the needs of accumulation and commodification. This mutated form of accumulation is powerful in ways that we have still to fully comprehend. This is especially the case in advertising, a culture-forming industry that leads the way for accumulation in virtual space. The digital networks that generate potentially endless fields of virtuality penetrate the planet almost in its entirety. Fibre-optic cables, multivariant wireless technologies and laser links criss-cross the land, sea and air carrying digitality into regions, cities, towns, streets, buildings, houses, rooms, televisions, laptops, desktops, smartphones and AirPods. Digitality reaches to wherever users may be, so to create an atmosphere of commodification and to instantiate direct commodification though advertising. Advertising keeps the web flickering and sucking up our attention. Its messaging is inserted into the dopamine hit that we seek when communicating and connecting online. And its messaging (as with all adverts since the beginnings of mass media) is the message of dreams, of impossible worlds and impossible happiness and impossible health and impossible sex and *impossibility* laid out as real and as possible, every day, every hour, every minute. Impossibility is the psychological axis of alienation upon which production and consumption turn.

The digital culture of dreams and promises makes us even more susceptible to digital's seeming preternatural quality. Our non-recognition of it reinforces the impression of its magical qualities. A magical world can appear before us with the press of a 'button' which is in fact an 'icon' or an 'avatar', which is itself an electronic–digital connection to virtual space and a code-driven arrangement

of pixels. Through the connection, the screen emits a dopamine-infused spell, promising magical solutions to manufactured problems. Distributed dreams become simultaneously individual and public dreams; the connection becomes virtual accumulation. To paraphrase Debord, the dream is a spectacle and the dream becomes capital.[72] The irrationality of advertising further feeds our perception of digital machines. Our 'fascination with automatisms [and] the technique of things and processes beyond our [analogue] senses'[73] gives digital technology an almost miraculous quality. To us, mostly untutored as to the working of digital machines that have no analogue in nature or in our bodies that we can correlate, they seem to be more than 'smart'. We are told and we mostly believe that they are capable of almost anything as compared with our human-scaled capacities in time and space; and capable of *literally* anything in the virtual space of their own creating. This, and decades of propaganda by the 'data merchants'[74], means that we trust computing—if not the data companies that proliferate their effects. And trust means that we give ourselves over to them, or have appropriated from us by them much that in a previous analogical context was held individually, socially and culturally, in forms of knowledge, in forms of political communication, in sociality and social relations, and in production and consumption.

Much of what I have written here bespeaks a level of Frankfurt School hopelessness—that the commodity and its digital medium have got humanity by the throat. And to a significant degree, digitality expressed as commodification has shown Adorno and Horkheimer to be more than perceptive in their analysis of late-modern capitalism. But the authors of the *Dialectic of Enlightenment*, for all its darkness, did not advocate hopelessness. They did not express hope, to be sure, but neither did they project despair. They kept their philosophical options open until the end of their book, when the very last sentence opens a crack of light: 'all things that live are subject to constraint', they write. And constraint means constraint on domination by the negative dialectic as much as domination by digitality. Moreover, Adorno, for one, was clear that in his thinking he was engaged in diagnosis, and left prognosis to others.

Much of what I've written bespeaks a criticism of Harvey, too. But it is a criticism based upon a respect that for me goes back a long way. As a student I heard him speak, in around 1995, to an audience of perhaps one thousand. He came on stage after being introduced and stood alone under a spotlight, with no notes or lectern or specific question to address—and began talking. As he continued, I was increasingly amazed by the performance. He spoke in sentences, as from a page, but with the practiced naturalness of an actor in a stage play. He was clear, coherent and compelling. He spoke for an hour about the tenets of Marxism, of the benefits of the geographic imagination, of the various struggles of peoples around the world at that time. And optimistically (as always), he talked about the prospects for socialism. I recall that performance from time to time. And I recall it whenever I purchase another of his books or watch his lectures on the web. And with each encounter I became more convinced that he can

speak unprompted and flawlessly for an hour because he knows his lines. And the lines never seem to stray very much from the central guiding principles of his own brand of Marx. And as I read and watched through the years, always with an interest that never flagged, my thoughts would sometimes despairingly turn to the cliché that has been attributed to John Maynard Keynes, which goes 'When the facts change, I change my mind. What do you do?'

Marx came from an analogue-only universe in respect of its technology. Marxism is thus based upon untheorised or unquestioned analogue assumptions about the function of technologies within capitalism. Harvey's Marxism is analogue because he considers technology from the perspective of Marx. The technological facts had already changed in 1989 and Harvey didn't change his mind—or perhaps it's fairer to say that he didn't notice or pay sufficient attention to the new facts and the changes that flowed from them. Harvey didn't and doesn't want his Marxism to change. But in a post-modern, post-analogue world, it must change or it must engage.

Mark Fisher, an uncompromising music, film and TV critic, critical theorist, popular culturalist, philosopher, and most of all blogger, killed himself in 2017. In many ways this British writer who was born in 1968 and so grew up under the shadow of what Jenny Turner called 'the neoliberal restoration', was a Marxist for these post-modern times.[75] He was a Marxist in ways that Harvey isn't. For example, he drew upon a wide range of sources from TV shows to music lyrics, from Deleuze to Baudrillard, from Spinoza to Freud, and from Jameson to Žižek. He also, as Simon Reynolds writes in the Foreword to his massive, posthumously published *K-Punk*, 'wrote penetratingly about politics, philosophy, mental health, the Internet and social media (the *phenomenology of digital life*—its peculiar affects of connected loneliness and distracted boredom).'[76] And he lived his intellectual life digitally by expressing his ideas mainly through his blogs. But he lived digitality enough to know that the internet was both conduit to a vital audience beyond the academy, and a temporal trap that forces us to live increasingly in the present, and with digital technology 'completely colonizing our sense of what technology is.'[77] Not realising what we have lost, in other words. Non-realisation through non-recognition keeps us incarcerated and suspended in relationlessness in digital time and space–alienated from the technology and from people around us:

> One of the effects of modern communications technology is that there is no outside where one can recuperate. Cyberspace makes the concept of a 'workplace' archaic. Now that one can be expected to respond to an email at practically any time of the day, work cannot be confined to a particular place, or to delimited hours. There's no escape—and not only because work expands without limits. Such processes have also hacked into libido, so that the 'tethering' imposed by digital communications is by no means always experienced as something that is straightforwardly unpleasant. As Sherry Turkle argues, for example, though many parents

> are increasingly stressed as they try to keep up with email and messages while continuing to give children the attention they need, they are also magnetically attracted to their communications technology…[78]

This suffocation, this 'no escape', emerges directly out of Fisher's concept of 'capitalist realism' whereby, as he put it in his 2009 book of the same name, 'it's easier to imagine the end of the world than the end of capitalism.'[79] For Fisher, capitalist realism is a term preferable to, though synonymous with, postmodernism. He prefers it because it seems more final, and means that modernity is completed with capitalism's triumph through a commodification that has colonised the consciousness of billions:

> the lack of alternatives to capitalism is no longer even an issue. Capitalism seamlessly occupies the horizons of the thinkable. [Fredric] Jameson used to report in horror about the ways that capitalism had seeped into the very unconscious; now, the fact that capitalism has colonized the dreaming life of the population is so taken for granted that it is no longer worthy of comment. It would be dangerous and misleading to imagine that the near past was some prelapsarian state rife with political potentials, so it's as well to remember the role that commodification played in the production of culture throughout the twentieth century.[80]

The book is closed, and we must move on. We cannot wallow in theory and the neurotic parsing of it to understand the present condition, *ad infinitum*. But if the thinkable is colonised, it's only because our lack of imagination makes it so. And occupation of the thinkable is domination of the thinkable, and domination, as Raymond Williams reminds us, 'cannot exhaust all social experience.'[81] Fisher's solution, if there is one, is that 'we have to invent the future.'[82] This sounds good, but it seems contradictory if the thinkable is already colonised. And this brings me back one last time to David Harvey. Harvey's future is already invented. It's baked into his modernity and capitalism, and capital's spatial limits will see it implode, 'in the fullness of time'. Fisher's future is there for the inventing, but it's not clear how to do this when capitalism colonises every corner of reality. Nonetheless, as a Marxist for our times, there's a way of reading Fisher, in opposition to Harvey, that allows us to see with a bit more imagination. To extend the horizons of the thinkable, we need to think a good deal harder. This means occupying that which has already been thought within the left and Marxist traditions, whilst keeping the back and front doors—the past and the future—open. In a real sense, Harvey's discomfort with macro-level periodising—post-modern, late-capitalism, etc.—forecloses his space economy framework. But implicit in Fisher's exhaustive analysis of the 'seamless' expansion of capitalist realism through the commodity is that if there is nothing progressive and humanist in it or thinkable beyond it—a possibility he does

not close off—then we need to invent it. And seeing capitalist realism as being synonymous with postmodernity suggests also that there are ways through the social-psychological and technological hegemony of capitalism.

And that's one reason I've stuck with postmodernity and tried to revive it as a re-thinkable concept. Through it we can invent the future. Digitality has played a major part in ending modernity. We live in a new ideological and technological age now: post-modern and post-analogue. This doesn't mean that we are post-capitalism, or anywhere near it. But it does mean that we need to look at the frames of analysis that allow us to make sense of the ideological and technological now. This, in its turn, doesn't mean that we need to look for and establish some kind of post-Marxism—like post-capitalism, it's a concept that barely makes any logical or theoretical sense. Marxism co-evolved with capitalism and modernity. Modernity has moved on, because capitalism, as its leading dynamic force, has mutated, through the digitality-effect upon accumulation. Marxism, in all its modern and analogue senses, needs to adjust. What this means is that our post-modernity requires a post-modern Marxism.

A post-modern Marxism would be an adaptation of its theoretical structures to the 'realism' that is around it and in which its thinkers live and practice. The primary reality being the reality of digitality. We need to recognise this reality and prioritise on the basis of how it speaks to us today. To clearly understand the import of the digital would be to understand that in our postmodernity many of the things that we have left behind in the modern and analogue universe—democracy, production, consumption, labour, time, space, sociality, socialism, communism—no longer function as they once did, and so we should consider whether is it possible to fit them into this new technological context. Once we understand this context we can then begin to adapt the legacies of our modern and analogue universe to it, or, better, assert more democratic control over digitality so to make its logic fit better with the legacies that we still need to work for us if we are to avoid a capitalism without stabilisers lapsing into serious catastrophe or barbarism.

Gramsci wrote in his *Prison Notebooks* about how in times of prolonged crisis it is vital, politically speaking, to understand the precise nature of the 'terrain of the conjunctural', meaning the whole scope of the crisis in its trans-historical context. He wrote:

> A crisis occurs, sometimes lasting for decades. This exceptional duration means that incurable structural contradictions have revealed themselves (reached maturity), and that, despite this, the political forces which are struggling to conserve and defend the existing structure itself are making every effort to cure them, within certain limits, and to overcome them. These incessant and persistent efforts (since no social formation will concede that it has been superseded) form the terrain of

> the 'conjunctural', and it is upon this terrain that the forces of opposition organize.[83]

Today we are in an extended period of crisis—for three decades and more it has gone on—and it is a crisis that digitality helped to create, but also to both mitigate and prolong. This is the hostile terrain upon which we need to organise, but we can only do it through a form of Marxism that recognises our postmodernity as a reality and recognises itself similarly.

Notes

[1] Mark Fisher (2018) *K-Punk*. New York: Repeater Books, p.13.

[2] Monica Bulger (2019) 'Special Report on Digital Media', *The Economist*, 5th January, p.44.

[3] In what was a rare positive action in 2019, it was widely reported that the San Francisco Board of Supervisors banned the use of facial recognition technology in that city, a ban that extends to government agencies, including the police. See Kate Conger, Richard Fausset and Serge F. Kovaleski (2019) 'San Francisco Bans Facial Recognition Technology', *New York Times*, 14 May: https://www.nytimes.com/2019/05/14/us/facial-recognition-ban-san-francisco.html

[4] The idea of the 'prosumer' seems to have been coined by Alvin Toffler in his 1980 work *The Third Wave*, where he asserted that pre-industrial society was a prosumer one, but that industrialised society opened a gap between production and consumption. Post-industrial society, he argues, offers the chance for these two roles to come together once more in a more holistic and positive way. More recently, George Ritzer and Nathan Jurgenson build upon Toffler's idea in the context of Web 2.0 and argue that 'capitalism is having a difficult time gaining control over at least some of the prosumers on Web 2.0' and so there exists the possibility of a genuine freedom because people 'seem to enjoy, even love, what they are doing and are willing to devote long hours to it for no pay.' However, the authors take no cognisance of the function of algorithms and their capacity to aggregate and potentially monetise *all* activity on the open Web. See their (2010) 'Production, Consumption, Prosumption: The Nature of Capitalism in the Age of the Digital "Prosumer"', *Journal of Consumer Culture* 10(1), 13–36. More generally in the social sciences the term is critiqued as merely another form of exploitation—which it is—but this is still theorising upon old paradigms of production and consumption from another age.

[5] Karl Marx (1994) 'A Preface to the Critique of Political Economy', *Selected Writings*, Lawrence H. Simon (ed.). Indianapolis: Hackett Publishing Company, p.211.

[6] Jean Baudrillard (1993) *Symbolic Exchange and Death*. London: Sage.
[7] See Ritzer and Jurgenson, 'Production, Consumption, Prosumption', pp. 19–22.
[8] Cited in Baudrillard's *Symbolic Exchange and Death*, p.16.
[9] Ibid., pp.15–16.
[10] Ibid. Interestingly, David Harvey takes up this issue and these same comments by Marx in his *Marx, Capital and the Madness of Economic Reason* (2017) (London: Profile Press). However, he dismisses such Baudrillardian reading of Marx and technology as 'ludicrous' and a 'technological fetish' that is a 'vast distraction' from the real work of political activism. See pp.125–127.
[11] Karl Marx (1973) *Grundrisse*. London: Penguin Books, p.705. (my italics)
[12] Rahel Jaeggi (2014) *Alienation*. New York: Columbia University Press.
[13] See Chapter Two.
[14] Jaeggi, *Alienation*, p.23.
[15] Ibid., p.25.
[16] John Culkin. (1967) 'A Schoolman's Guide to Marshall McLuhan', *The Saturday Review*, 18 March, pp.51–53. http://www.unz.org/Pub/SaturdayRev-1967mar18-00051
[17] Bernard Stiegler. (2009) Teleologics of the Snail: The Errant Self Wired to a WiMax Network', *Theory, Culture & Society* 26(2–3) (March/May), 33–45, p.36.
[18] Jaeggi, *Alienation*, p.24.
[19] See Robert Kitai (2018) 'Three Reasons Why Audio Will Conquer Social Media' *Adweek*, 21 June: https://www.adweek.com/digital/3-reasons-why-audio-will-conquer-social-media/
[20] Raymond Williams (1989/1958) 'Culture is Ordinary' in *Resources of Hope: Culture, Democracy, Socialism*, Robin Gable (ed.). London: Verso, p.96. Outside the closed loop, non-digital cultural forms continue, and tradition and diversity and creativity by practitioners sustain them all over the world. Examples are endless, from Japanese origami to fusion cuisine, and from Anglo-Indian literature to the Charter for African Cultural Renaissance. However, practices such as these are increasingly marginal and even face extinction, like languages, as new generations of digital natives see less meaning in them or are literally no longer exposed to them.
[21] Nicholas Mellamphy (2015) 'Editorial', *Fibreculture* 25, p.5.
[22] Jaeggi (2014) *Alienation*. p.24. Jaeggi goes on to note that: 'the concept of alienation posits a connection between *indifference and domination* that calls for interpretation. The things, situations, facts, to which we have no relation when alienated do not seem indifferent to us without consequence. They dominate us in and through this relation of indifference.' (p24) (emphasis in original).
[23] Milton Friedman (2002) *Capitalism and Freedom*. Chicago: University of Chicago Press, p.28.
[24] China is a major exception and regulates much within its capitalism. However, monopolies are not the same kind of problem in China. Corporations, even monopolies such as Baidu, Alibaba and Tencent, are under the

control of the state, and ultimately act in the interests of the state, and so may be regulated or broken up whenever the state decides to do so. see Patrick Williams (2014) 'The reign or reining in of Chinese monopolies', *East Asia Forum*, 16 December: http://www.eastasiaforum.org/2014/12/16/the-reign-or-reining-in-of-chinese-monopolies/

[25] Industry Analyst Roger McNamee said in an interview that: 'Google, Facebook and Amazon are increasingly just super-monopolies, especially Google and Facebook. The share of the markets they operate in is literally on the same scale that Standard Oil had ... more than 100 years ago—with the big differences that their reach is now global, not just within a single country'. Chantel McGee (2017) 'Google, Facebook are super monopolies on the scale of Standard Oil, says VC Roger McNamee', *CNBC Markets*, 27 June: https://www.cnbc.com/2017/06/27/google-facebook-are-super-monopolies-roger-mcnamee.html

[26] Unsurprisingly, computer technology companies spend more on R&D than any other sector. A large proportion of this, however, is in AI and the algorithms upon which it functions. See Rani Molla (2017) 'Tech companies spend more on R&D than any other companies in the U.S.', *Recode*, 1 September: https://www.recode.net/2017/9/1/16236506/tech-amazon-apple-gdp-spending-productivity

[27] Yevgeny Morozov (2013) 'The Meme Hustler', *The Baffler*, April. https://thebaffler.com/salvos/the-meme-hustler

[28] Mark Andrejevic and Mark Burdon (2015) 'Defining the Sensor Society', *Television and New Media* 6(1), 19–36, p.20.

[29] Ted Striphas (2015) 'Algorithmic Culture', *European Journal of Cultural Studies* 184(4–5), 395–412, p.407.

[30] Ibid.

[31] Ibid.

[32] Ibid.

[33] Ibid.

[34] Reuben Binns (2018) 'Algorithmic Accountability and Public Reason', *Philosophy & Technology* 31(4), 543–556, p.545.

[35] Ibid.

[36] Ibid., pp.545–546.

[37] Adorno and Horkheimer (1986) 'The Culture Industry: Enlightenment as Mass Deception', in *Dialectic of Enlightenment*. John Cumming (trans.). London: Verso. p.134.

[38] Williams, 'Culture is Ordinary', p.93.

[39] Ibid.

[40] Kurt Andersen (2012) 'You Say You Want a Devolution?' *Vanity Fair*, January. https://www.vanityfair.com/style/2012/01/prisoners-of-style-201201 (emphasis mine).

[41] Ibid.

[42] Andersen, 'You Say You Want a Devolution?'

[43] Theodor Adorno (1997) *Prisms*. Cambridge, MA. MIT Press, p.83.
[44] Karl Marx (1976) *Capital* Volume 1 Harmondsworth: Penguin, p.536.
[45] Hartmut Rosa (2003) 'Social Acceleration', *Constellations* 10(1), pp.49–52.
[46] Tradition, as an integral part of culture, would always look after itself, and whether commodified of not, in music or literature or art, etc. consumers and producers of traditional or conservative cultural forms would not see relative predictability and absence of change as indication of a crisis of culture.
[47] As noted earlier, Marshall Berman saw this contradiction in terms of 'modernisation as adventure, and modernisation as routine'. See (1982) *All That is Solid Melts into Air: The Experience of Modernity*. London: Verso. p.243.
[48] See Reebee Garofalo (2002) 'Crossing Over: From Black Rhythm & Blues to White Rock 'n' Roll' in N. Kelley (ed.) *Rhythm and Business: The Political Economy of Black Music*. New York: Akashit Books, pp.112–137: p.113. The Hip Hop and rap music of the late 1970s was perhaps the last flowering of a new cultural form, but it was born within the culture industries of New York and Los Angeles—and wherever it did emerge as something new from the streets, then the artists themselves were more often than not ready to embrace the culture industries (the record industries) in order to commercialise and commodify their 'product'. See M. E. Blair (2004) 'Commercialization of the Rap Music Youth Subculture' in Murray Forman and Mark Anthony Neal (eds.), *That's The Joint! The Hip Hop Studies Reader* (pp. 497–504). New York, NY: Routledge.
[49] Fredric Jameson (1983) 'Postmodernism and Consumer Society' in Hal Foster (ed.) *Postmodern Culture*. London: Pluto Press, p.115.
[50] Ibid., pp.115–116.
[51] Ibid., p.116.
[52] Ibid., p.118.
[53] See Robert Hassan (2003) 'Network Time'
[54] Barbara Adam (1998) *Timescapes of Modernity*. New York: Routledge.
[55] Bruce Collier and James MacLachlan (1998) *Charles Babbage and the Engines of Perfection*. Oxford: Oxford University Press,, p.74.
[56] This phrase was referenced in 'Analytical Engine', History-Computer.com: https://history-computer.com/Babbage/AnalyticalEngine.html
[57] Adorno and Horkheimer 'The Culture Industry', p.137.
[58] Caspar Salmon (2018) 'Filming a Great Gatsby origin story shows our culture eating itself', *The Guardian Online*, 22 November: https://www.theguardian.com/commentisfree/2018/nov/22/great-gatsby-origin-story-culture-book
[59] Adorno and Horkheimer, 'The Culture Industry', p.134.
[60] Emmanuel Levinas (1985) *Totality and Infinity*. Pittsburgh, PA: Duquesne University Press, p.80.
[61] Mark Lilla (2017*) The Once and Future Liberal*. New York: Harper.

[62] David Harvey (1990) *The Condition of Postmodernity*. Oxford: Blackwell, Op. Cit., p.358.
[63] Trade Union membership in Britain in 1989, for example, was at 41 percent (down from 55 percent in 1979), but double what it is today (20.1 percent). See Bob Mason and Peter Bain (1993) 'The Determinants of Trade Union Membership in Britain: A Survey of the Literature', *Industrial and Labour Relations Review*, 46(2) (January), 332–351. See also CWU Research (2018) *Trade Union Membership 2017: Statistical Bulletin*: https://www.cwu.org/wp-content/uploads/2018/07/Trade-union-membership-2017.pdf
[64] Harvey, *Postmodernity*, p.359.
[65] Ibid., p.183.
[66] Ibid., p.43.
[67] ibid., p.49.
[68] Jean-François Lyotard (1979) *The Postmodern Condition: A Report on Knowledge*. Manchester: Manchester University Press, p.4.
[69] See http://davidharvey.org/page/4/
[70] Stiegler, 'Teleologics of the Snail', p.38.
[71] See Jaeggi, *Alienation*, p.37.
[72] Guy Debord (1994) *The Society of the Spectacle*. New York: Zone Books, p.17.
[73] Gehlen (1980) *Man in the Age of Technology*. New York: Columbia University Press, p.14.
[74] Theodore Roszak (1986) *The Cult of Information*. New York: Pantheon.p.31.
[75] Jenny Turner (2019) 'Not No Longer but Not Yet', *London Review of Books*, 41(9), p.3.
[76] Fisher *K-Punk*, p.14. (emphasis mine)
[77] Ibid., p.686.
[78] Ibid., p.466.
[79] Mark Fisher (2009) *Capitalist Realism: Is There No Alternative?* Ropely, Hants: O Books, p.1.
[80] Ibid., pp.8–9.
[81] Raymond Williams (1979) *Politics and Letters: Interviews with New Left Review*. London: Verso, p.252
[82] Fisher, *K-Punk*, pp.629–682.
[83] Antonio Gramsci (1992) *Selections from the Prison Notebooks of Antonio Gramsci*. New York: International Publishers, p.178.

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THE CONDITION OF DIGITALITY

David Harvey's *The Condition of Postmodernity* rationalised capitalism's transformation during an extraordinary year: 1989. It gave theoretical expression to a material and cultural reality that was just then getting properly started – globalisation and postmodernity – whilst highlighting the geo-spatial limits to accumulation imposed by our planet.

However this landmark publication, author Robert Hassan argues, did not address the arrival of digital technology, the quantum leap represented by the move from an analogue world to a digital economy and the rapid creation of a global networked society. Considering first the contexts of 1989 and Harvey's work, then the idea of humans as analogue beings he argues this arising new human condition of digitality leads to alienation not only from technology but also the environment. This condition he suggests, is not an ideology of time and space but a *reality* stressing that Harvey's time-space compression takes on new features including those of 'outward' and 'inward' globalisation and the commodification of all spheres of existence.

Lastly the author considers culture's role drawing on Rahel Jaeggi's theories to make the case for a post-modern Marxism attuned to the most significant issue of our age. Stimulating and theoretically wide-ranging *The Condition of Digitality* recognises post-modernity's radical new form as a reality and the urgent need to assert more democratic control over digitality.

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THE AUTHOR

Robert Hassan researches and teaches at the University of Melbourne and is the author, co-author or editor of numerous monographs and books on topics such as time, new media theory, politics and the philosophy of media. His recent works include *Uncontained: Digital Connection and the Experience of Time* (2019) and *The Information Society: Cyber Dreams and Digital Nightmares* (2017). Since 2009 he has been Editor-in-Chief of the journal *Time & Society*.

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