

University of Groningen

Machines for Living

Wittingslow, Ryan Mitchell

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2014

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Wittingslow, R. M. (2014). *Machines for Living: Philosophy of Technology and the Photographic Image*. [Thesis fully external, Univ Sydney, University of Sydney]. <http://hdl.handle.net/2123/11854>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.



COPYRIGHT AND USE OF THIS THESIS

This thesis must be used in accordance with the provisions of the Copyright Act 1968.

Reproduction of material protected by copyright may be an infringement of copyright and copyright owners may be entitled to take legal action against persons who infringe their copyright.

Section 51 (2) of the Copyright Act permits an authorized officer of a university library or archives to provide a copy (by communication or otherwise) of an unpublished thesis kept in the library or archives, to a person who satisfies the authorized officer that he or she requires the reproduction for the purposes of research or study.

The Copyright Act grants the creator of a work a number of moral rights, specifically the right of attribution, the right against false attribution and the right of integrity.

You may infringe the author's moral rights if you:

- fail to acknowledge the author of this thesis if you quote sections from the work
- attribute this thesis to another author
- subject this thesis to derogatory treatment which may prejudice the author's reputation

For further information contact the University's Director of Copyright Services

sydney.edu.au/copyright

MACHINES FOR LIVING

PHILOSOPHY OF TECHNOLOGY &
THE PHOTOGRAPHIC IMAGE

*A thesis submitted in fulfilment
of the requirements for the degree
of Doctor of Philosophy*



RYAN MITCHELL WITTINGSLOW
UNIVERSITY OF SYDNEY

School of Letters, Art and Media
<http://www.sydney.edu.au/>
September, 2014

I declare that the research presented here is my own original work and has not been submitted to any other institution for the award of a degree.

Signed: _____

Date: _____

ABSTRACT

This dissertation examines the relationship that exists between two distinct and seemingly incompatible bodies of scholarship within the field of contemporary philosophy of technology. The first, as argued by postmodern pragmatist Barry Allen, posits that our tools and what we make with them are epistemically important; disputing the idea that knowledge is strictly sentential or propositional, he claims instead that knowledge is the product of a performance that is both superlative and artefactual, rendering technology importantly world-constituting. The second, as argued by Heidegger and his inheritors, is that technology is ontologically problematic; rather than technology being evidence of performative knowledge, it is instead existentially threatening by virtue of the fact that it changes the tenor of our relationship with the world-as-given. Despite the fact that these claims seem *prima facie* incompatible, I argue that they may be successfully reconciled by introducing a third body of scholarship: the philosophy of photography. For it is the case, I argue, that although we, qua human beings, occupy lifeworlds that are necessarily constituted by technology, technology also induces a kind of phenomenological scepticism: a concern that mediated action precludes us from the possibility of authentic experience. Arguing in favour of the sentiment that photographs serve as a kind of phenomenal anchor—a kind of machine for living—I claim that photographic images provide a panacea to this existential concern: despite being epistemically problematic, it is this selfsame epistemic “specialness” of photographs that forces us to phenomenologically recommit, if only temporarily, to the world in a serious way. Consequently, it is my belief that an analysis of our artefacts and the way they function is fundamentally incomplete without an analysis of the epistemic and ontological problems introduced of the photographic image; as I will demonstrate, the photographic image casts an extremely long shadow over the philosophy of technology.

ACKNOWLEDGEMENTS

I would like to thank my supervisors, Richard Smith and David Macarthur, for their advice and support—this would not have been possible without their help and guidance.

I would also like to thank my friends and family for their willingness to talk to me about my research during the course of my candidature. Regardless of whether their interest was feigned or not, their good humour and patience were more valuable than they can ever know.

A book of philosophy should be in part a very particular
species of detective novel, in part a kind of science fiction.
—Gilles Deleuze, *Difference and Repetition*

All this is unauthenticated, and I shall leave it open.
—Tacitus, *Germania*

CONTENTS

1	PREFACE: VIEWING THE WORLD	1
2	PARLIAMENTS OF THINGS	9
2.1	On Intending & Creating	9
2.2	The Premodern Prometheus	17
2.3	The Performance of a Lifetime	28
2.4	Between Artefact & World	36
3	NO MAPS FOR THESE TERRITORIES	45
3.1	Existence without Distance	45
3.2	Industrialising the Revolution	53
3.3	The World of Our Making	67
3.4	Hominem te Esse Memento	82
4	OPENING THE MECHANICAL TURK	97
4.1	Dark Chambers & Chess Players	97
4.2	Looking Through a Glass, Darkly	106
4.3	Carving Photography at its Joints, 1	120
4.4	Carving Photography at its Joints, 2	128
5	TRANSLATING RAYS INTO FAITH	143
5.1	A Nihilism We Can Believe in	143
5.2	Renewing our Vows to the World	153
6	FINALE: RIBBONS OF DREAMS	165
	BIBLIOGRAPHY	168

1

PREFACE: VIEWING THE WORLD

A film is a ribbon of dreams. The camera is much more than a recording apparatus; it is a medium via which messages reach us from another world that is not ours and that brings us to the heart of a great secret. Here magic begins. (Orson Welles, quoted in Cowie, 1973: i)

What you have in front of you is an analysis, and reconciliation, of two ostensibly incompatible bodies of work within the field of philosophy of technology: the former a pragmatic epistemology of artefactual performance deeply entrenched within the analytic tradition; the latter a reading of technology as ontologically threatening that is equally indebted to the Continental tradition. The first, as argued by philosopher Barry Allen, posits that our tools and what we make with them are epistemically important; disputing the idea that knowledge is strictly sentential or propositional, he claims instead that knowledge is the product of a performance that is both superlative and artefactual, rendering technology importantly world-constituting. The second, as argued by Heidegger and his inheritors, is that technology is ontologically problematic; rather than technology being evidence of performative knowledge, it is instead existentially threatening by virtue of the fact that it changes the tenor of our relationship with the world-as-given. Despite the fact that these claims seem *prima facie* incompatible, I argue that they may be successfully reconciled by introducing a third body of scholarship: the philosophy of photography. For it is the case, I contend, that although we, qua human beings, occupy lifeworlds that are necessarily constituted by technology, technology also induces a kind of phenomenological scepticism: a concern that mediated action precludes us from the possibility of authentic experience. Arguing in favour of the sentiment that photographs serve as a kind of phenomenal anchor—a kind of “machine for living”—I claim that photographic images provide a panacea to this existential concern: despite being epistemically problematic, it is this selfsame epistemic “specialness” of photographs that forces us to phenomenologically recommit, if only temporarily, to the world in a serious way. Consequently, it is my belief that an analysis of our artefacts and the way they function is fundamentally incomplete without an analysis of the epistemic and ontological problems introduced of the photographic image; as I will demonstrate, the photographic image casts an extremely long shadow over the philosophy of technology.

Accordingly, I began this work with two things in mind. The first was a concern for the technological: a deep, almost erotic fascination with the processes by which things are made and our relationships with those things—

both in the process of creation and afterwards. For technology has always had an uncertain—one might even say threatening—role in philosophy. From Aristotle onwards, the character of technology assumes this oddly *contingent* character; it exhibits a kind of shiftless casuistry, unmoored from the realm of absolutes. Consider: in *Physics*, Aristotle makes the claim that “Of things that exist, some exist by nature, some from other causes” (Aristotle, 1941, 192b8). The distinction that he renders between the two categories is the intuition that kicks off the classical story: animals, plants and the “simple bodies” of the classical elements exist by nature, whereas the relics of material culture (“a bed and a coat and anything else of that sort”) are those things that are derived from some other source (192b18). Things that exist by nature have within themselves “a principle of motion and of stationariness” and are accordingly subject to certain natural rhythms rendering them dynamical; when a seedling grows into a grand tree, or a fire dances upwards, or tidal patterns align with the phases of the moon, they are acting according to their inherent nature—something is *natural* when it has a *nature*; i.e.: they are natural in the sense that their existence is not premised upon human interference. Moreover, these non-intentioned entities and the natures that they obey are the good and proper object of what Aristotle dubs *epistēmē*, commonly rendered as “scientific knowledge”. For Aristotle, *epistēmē* is a knowledge of first principles and natural things; of inalienable qualities extrapolated from static base claims. It is a form of purely deductive knowledge; the realm of propositions regarding discrete, immutable natures:

We all conceive that a thing which we know scientifically cannot vary; when a thing that can vary is beyond the range of our observation, we do not know whether it exists or not. An object of Scientific Knowledge, therefore, exists of necessity. It is therefore eternal, for everything existing of absolute necessity is eternal; and what is eternal does not come into existence or perish. (*Nicomachean Ethics*, 1139b)

Conversely, those things that exist by other causes have no innate impulse to change beyond what the nature of that which it is composed: “*nature is a source or cause of being moved and of being at rest in that to which it belongs primarily*, in virtue of itself and not in virtue of a concomitant attribute” (192b20-23). Because they are not the products of the objects of *epistēmē*, Aristotle’s “artificial products” (that is, the products of *artifice*) do not have the source of their own production. Rather, artificial products are the result of intentioned *technē*, *technē* being the form of knowledge that deals with things that change. Unlike *epistēmē*, there is a sort of dynamism to *technē*, as it is the process of a kind of intelligible, directed action. Neither *doxa*, the unfettered opinions and beliefs of the populace, nor mere experience (*empeiria*), *technē* is something very much like the realm of craft, or specialised knowledge—sculpture, ship-building, carpentry, statesmanship. Instances of *technē* cannot be reduced to nor entirely extrapolated from first

principles or propositional claims, because the process itself is necessarily adaptive. The making of something like a wooden table is one of dynamical, bodily feedback; of a series of iterations wherein no individual act is identical to any other simply by virtue of the changing shape of the timber substrate. “Art [*technē*] does not deal with things that exist or come into existence of necessity [...]. [Art deals] with that which admits of variation” (*Nicomachean Ethics*, 1140a).

The fact that “art”—that is to say, technology—is suspect because it “admits of variation” is a crucial point. As I demonstrate in the next section, the assumption that technology and workmanship is somehow a shiftless or debased form of knowledge when compared to propositional claims is one that has had a profound influence on the Western philosophical canon. Although I cannot provide a diagnosis for why this is the case—at least, beyond the purest self interest on the part of Plato and his acolytes¹—this marginalisation of technology in the philosophical literature has no doubt influenced the suspicion with which it is often treated, particularly by philosophers of an Heideggerian bent. For it is with Heidegger that phenomenology and the study of technics become properly welded; although the objects of his inquiry expands from analyses of tool-being in his earlier works (hammers, tables, chairs) to analyses of the technological lifeworld in later publications (power stations, cities, technological superstructures), Heidegger is one of the first philosophers of the 20th century to take questions of technology seriously, particularly with regards to how technology can present an existential threat to the tenor of our collective lived experience. We will be examining some of these intuitions further in the piece.

The second thing that interested me came to my attention rather more slowly, but in hindsight was equally inescapable. Thanks to my other academic interests, I’ve come into possession of a small but highly compelling collection of glossy prints and slightly faded black-and-white photographs from the 1940s, 50s and 60s—a vision of things to come as promulgated by those writing (and sometimes dying) decades before I was born. Despite, or even because, they were so deeply inaccurate, I found those doctored photographs of our thwarted future—flying cars, robot servants, Jetsonian spaceflight, post-scarcity economics—bizarrely compelling. Though I was obviously in possession of the fact that these photographs were elaborate fictions, there was and remains something about the photos of figures such as the Lee Merlin, winner of the 1957 Miss Atomic Bomb beauty pageant (FIGURE 19) that made me take them seriously; a certain quality inherent to those images had that made them feel *something* like the truth. Thus the second question with which this work is concerned: what is the relationship that holds between photographs and the world? Though this is perhaps the question at the heart of the philosophies of the photographic image (that is, analytic philosophy of film and philosophy of photography, both of which find their genesis in Stanley Cavell’s *The World Viewed*), it is a question that

¹ It seems natural to valorise the life of the mind when one has no particular talent for manual labour.

has attracted, in my view, a dearth of satisfying answers. For it is almost as if the photographic image is somehow more convincing than other kinds of image—as if there is something mysterious, almost mystical, about its very nature that warrants our attention. For that matter, it is almost as if we would like to say that the photographic image is *true*, that it has *identity* with the world, but are unable. It is in this vein that Cavell notes that “[a] photograph does not present us with “likenesses” of things; it presents us, we want to say, with the things themselves. But wanting to say that may well make us ontologically restless” (Cavell, 1979: 17). Even when producing a veridically minimal image—say, a David LaChapelle photograph—our intuitions demand that we take serious the idea the photographic image retains a presumption of objectivity that other forms of representation do not. The image, far more than painting or literature, is parasitic upon the Real, and so we react to it as if the image is reflecting Real things. Or even more explicitly: “We might say: A painting *is* a world; a photograph is *of* the world” (Cavell, 1979: 24).

This is a powerful intuition: we want to be able to say that a photograph of something is evidence of an event or an object having been the case. When we see events unfold on CCTV, we want to say that we know that they occurred by virtue of the fact that they were captured; when a private eye shows a cuckolded husband photographic evidence of his wife’s infidelity with a local politician and a well-hung sex dwarf, it seems natural to say that we know *know* that infidelity to be the case. That is to say: we believe that photographic apparatuses—and that which they produce, photographic images—are, by virtue of their ostensive and automatic ability to represent veridically reliable representations, somehow truth-bearing or world-bearing; they seem to capture knowable facts about the world in the former case, or that they seem to explicitly *capture the world* in the latter. However, this assumption seems *prima facie* incompatible with the idea that technology is somehow disreputable, dangerous or otherwise suspect; how is it that we can call photographs truth-bearing or world-bearing if they are just as misleading (perhaps even more misleading) as any other kind of technological apparatus? Are they, as our intuitions seem to suggest, epistemically load-bearing? As I will explore in my concluding chapters, although it is the ostensive *automatism* underpinning photographic processes that forces us to take them seriously, this automatism also seems to problematise the idea that technology is innately existentially threatening.

So where to begin? Some breed of phenomenological analysis seems like an obvious choice. Phenomenology is, after all, the study of *appearances*, of things as they appear to consciousness; moreover, as the intellectual movement to which Heidegger belonged, an analysis of phenomenological techniques might seem appropriate. Nonetheless, I have decided against beginning this thesis with Heidegger or any of his subsequent readers. Although Heidegger and his inheritors are the subject of CHAPTER 3, I begin CHAPTER 2 with a brief discussion of the intentional relationships we have with

our artefacts when we produce them, arguing that propositional theories of knowledge are insufficient to account for certain kinds of intelligible, knowledgeable, intentional activities—the kinds of activities that David Pye refers to as constituting “the workmanship of risk” (CHAPTER 2.1).² Given that observation, I move to a discussion of the pre-linguistic origins of material culture, some 2.6 million years ago, wherein I claim, referring to the work of philosopher Barry Allen and anthropologist Roy Rappaport, that propositional accounts of knowledge are also *historically* untenable in that recognisably knowledgeable activity—the making of tools—predates language by over two million years. Indeed, Allen and Rappaport both argue that technology in an important sense serves to necessarily *constitute* the human being, with the idea of a pre-technological yet linguistic human a theoretic impossibility. According to Allen, a pre-technological human would be *no human at all*; it is an entity with which we would share none of the important conditions for humanhood. Rather, the qualities that we consider to be intrinsically human, rather than being premised upon a linguistic or propositional capacity, are instead premised upon participating in a certain kind of intentioned, mutually complementary economy of artefactualised action—an actual quite unlike the indexical instances of tool use in non-human animals (CHAPTER 2.2).³

Subsequently, I argue in favour of the epistemic account outlined by Allen in his *Knowledge and Civilization* and *Artifice and Design*, wherein he claims that technology, in addition to being human-constituting, is also knowledge- and world-constituting. Our artefacts, whether physical, linguistic or cognitive, are the product of a kind of intentional, superlative artefactual performance that is itself knowledge-making. Under this rubric, both Rylean knowledge-how claims and knowledge-that claims are collapsed into a single kind of activity; a pragmatic activity where the knowledge-value of an outcome is entirely subject to it passing or exceeding certain success criteria in an interesting or remarkable way. Not only does this have profound ramifications for a theory of knowledge, there is also an important *phenomenal* aspect to the affair; under this definition, not only do our artefacts serve as physical instantiations of a knowledge-making process, they are also world-constituting in that our artefacts constitute a great deal of our lived experience (CHAPTER 2.3). Finally, I conclude CHAPTER 2 with some comments about the metaphysical ramifications about Allen’s epistemic project; although Allen is brutally dismissive of metaphysics (as befits a pragmatist),

2 “Agency” and “intention” are recurring themes throughout this work, as will become apparent. Borrowing the distinction from Donald Davidson, and as I note in CHAPTER 2.1: “attributions of intention are typically excuses and justifications; attributions of agency are typically accusations of responsibility” (Davidson, 1980: 48).

3 “Indexicality” is also a concept that will recur many times over the course of this work, in a number of different capacities: referring to language, artefacts and photographic images. Despite the multiplicity of applications, the meaning remains identical: in each case, I am invoking a broadly Peircean definition whereby *indices* are semiotic representations “whose relation to their objects consists in a correspondence in fact” (Peirce, 1992: 7). The relationship between the index and the object or event is *necessary* and *exclusive*; it cannot mean or do anything other than what the index allows.

we can nonetheless begin to make sense of metaphysical claims once we appreciate the kind of supervenience and emergence relationships that occur between human beings, our artefacts and the things-in-themselves. Although I will leave that analysis for CHAPTER 2.4, it will suffice to say that I argue that the nature of these relationships means that it is impossible for us to ever access the Real in a significant and non-attenuated way.

However, if we are in fact constituted by technology—if the superlative use of technology is what can be said to constitute knowledge—then why do we have so many existential concerns regarding its proper applications? It is with these questions in mind that I commence CHAPTER 3 with a broad (but necessarily incomplete) review of the extent to which Heidegger is suspicious of technology and its ramifications for our phenomenological status; as I outline in CHAPTER 3.1, Heidegger is concerned that technology serves to denude the world of its essential Being, thus negatively impinging upon the quality of our lived experience. CHAPTER 3.2 is a continuation of this discussion, though with an emphasis upon the possibility of agency and intentional action with a technological system. Tracing a sequence of scholarship that moves from Herbert Marcuse, through to Jürgen Habermas, and finally to Andrew Feenberg, I explore how the problem of agency has proved to be an important and seemingly unescapable aspect of post-Heideggerian philosophy of technology, particularly in theorists of a Marxian bent. Although it sounds like a minor point, the question of whether or not science and technology are to be considered forms of *speech* or *labour* proves a key aspect to the development of this debate.

Thereafter, having addressed the intersection of agency and politics, I in CHAPTER 3.3 move to a more finely-grained articulation of the way technological relations are understood to mediate or impinge upon our forms of life. Drawing first upon the deeply pessimistic and deeply Catholic scholarship of Albert Borgmann, I provide account for Borgmann's diagnosis and subsequent method of treatment for the ills of the contemporary era: although the world has become distanceless and the mechanisms of action have become ever-more invisible to us as our world grows increasingly technologised, he argues that we should re-sacralise the world by introducing certain kinds of phenomenologically significant *focal practices*. Conversely, the second part of CHAPTER 3.3 concerns the world of Don Ihde, who provides a far more optimistic account of our relationship with technology as well as providing a helpful taxonomy for the kinds of relations we have with our artefacts. Finally, in CHAPTER 3.4, I provide an account for what is otherwise an unintuitive result: that, in spite of the *technical* dimension of epistemology per Allen—that is, that we should not be discomfited by technology because it is world-constituting—the discomfort exhibited by these post-Heideggerian philosophers remains an intuitive and understandable response to the encroachments of technology, as if technology can somehow compromise or otherwise attenuate our capacities for authentic experience. To that end I invoke the scholarship of Bernard Stiegler, who, while echoing Allen's point that technology is human-constituting, also argues that we

are concerned by technology because it reminds of what we perceive as our own ontological lack—the loss of Being, in a Heideggerian sense—and our own impermanence and lack of agency in the face of the world.

Leaving broader technological questions behind, it is in CHAPTER 4 that we begin our analysis of the photographic image itself—particularly with regards to the presumed indexicality of the relationship that photographic images have with the real. To this end, I commence CHAPTER 4.1 with an historical discussion of the camera obscura and the awkward position that questions of internationality and agency have traditionally had with regards to the production of photographic images, particularly with respect to how this has influenced the rise of visualism in the sciences. Subsequently, in CHAPTER 4.2, I provide an exegesis of a key concept in analytic philosophy of photography—what is called the “transparency thesis”—particularly as it is presented in the scholarship of Roger Scruton, Kendall Walton and Gregory Currie. I then, in CHAPTER 4.3 and CHAPTER 4.4, cast doubt upon the assumptions of the transparency thesis by committing to an extended and sustained analysis of the constituent elements of a photographic image—photographer, camera, world, photograph and viewer—as well as outlining the complex and deeply contingent intentional web that holds between each element. I make clear, it is the *automatism*—the ostensive lack of performativity—seemingly inherent to the photographic process that renders it epistemically problematic, as well as complicating accounts of photographic agency and intention. With particular reference to the works of Jonathan Cohen & Aaron Meskin, Joel Snyder & Neil Walsh Allen, and Dominic McIver Lopes, I outline an intentional theory of photographic production, as well as providing a deflationist account of the nature of photographic content. Moreover, it is whilst justifying for this deflationist account that I bring the argument back to Allen’s work in CHAPTER 2 and the post-Heideggerian material in CHAPTER 3. Consequently, I argue that not only can both the knowledgable production and reading of photographic images be subsumed within Allen’s epistemic rubric, but also that the “epistemic specialness” of photographs (to borrow Cohen & Meskin’s phrase) means that they have a certain ontological gravitas that serves to address the existential concerns of Heideggerian thinkers.

I begin CHAPTER 5 by invoking Paola Marrati’s reading of Deleuze as a political thinker. Extrapolating from her account of the crisis of the action-image as a symptom of a broader dismay at the collapse of teleological accounts of human progress after the Second World War, I argue that the tenor of this dismay is not actually political but *technological*; we are deeply sceptical of the power and truthfulness of our own political narratives and the possibility for meaningful change because we are struck with the feeling that we have been denuded of existential agency. The Deleuzian crisis of the action-image is nothing less than a description of the Heideggerian crisis of technology; in both cases, the abolition of narratives and a picture of a world without being—a fundamentally *Allenian* world—leaves us feeling ontologically anxious (CHAPTER 5.1). Finally, it is in CHAPTER 5.2 that I make

it clear, via Stanley Cavell, Robert Sinnerbrink and Giorgio Agamben, that photographic images, by virtue of their presumed indexicality (and thus presumed veridicality) serve as a panacea to the existential doubts expressed by both Deleuze and post-Heideggerian philosophers of technology. Unlike other kinds of image—indeed, entirely unlike other kinds of objects in general—photographic images, whether moving or still, force us to recommit to the world in a serious and substantive way. The truth or falsity of the contents of these images is irrelevant, because the power of photographs is not contingent upon us *believing* that the contents of the image are indeed the case; rather, because they seem to capture a glimpse of the world, we are forced to *take the world seriously*. Although we can no longer rely on a positivistic account of how to live, of some kind of eudaimonic satisfaction, the myth-making capacity of photographic images enforces in us the conviction that it is still possible to have *lives worth living*. Le Corbusier, in his *Towards an Architecture (Vers Une Architecture)*, describes a house as “a machine for living in”. Although no doubt intended with a Gallic smirk, there is a lesson here: contrary to our intuitions, photographs are properly understood as machines for living: heuristic solutions to our existential scepticism, but no less remarkable for the fact.

In short, the following text is my attempt to open a dialogue between what has hitherto been two quite distinct avenues of inquiry: the philosophy of technology and the philosophy of film. Customarily addressed separately—by different theorists working in different fields, with very little overlap—it is my belief that an analysis of our artefacts and the way they function is fundamentally incomplete without an analysis of the problem of the photographic image; as I will demonstrate, the photographic image casts an extremely long shadow over the philosophy of technology.

2

PARLIAMENTS OF THINGS

We all know a little about Greek geometry and the teachings of the philosophers. Who knows anything about Greek metallurgy? Yet perhaps the gods speak to us in their own way. Of all the buildings that once graced the Athenian Agora, only one stands as it always was, untouched by time or reconstruction. That is the temple of the metallurgists. The Academy fell down long ago. It has been rebuilt—partly by money earned in the steel mills of Pittsburgh. (Hacking, 1983: 150)

2.1 *On Intending & Creating*

I have already mentioned that there is, in the Western philosophical canon, an apparent bias towards arguing that knowledge is something sentential or propositional. Although I shall not spend long on this point, it is nonetheless worth tracing the broad outlines of this idea in order to better identify the broad ramifications of accepting this view.¹ Per CHAPTER 1, we can begin our brief history with Aristotle:

For Aristotle, *technē* was a very particular kind of knowledge. It was not concerned with the necessary and eternal *a priori* truths of the cosmos, nor with the *a posteriori* contingencies and exigencies of ethics and politics. Rather, *technē* was instrumental reason, concerned with actualising the potentialities of beings that had no capacity to do so on their own, and which could be otherwise. Moreover, this was a kind of knowledge associated with people who were bound to necessity. That is, *technē* was chiefly operative in the domestic sphere, in farming and slavery, and not in the free realm of the Greek polis. It implied neither knowledge of the “divine” eternalities and necessities of the universe, nor the self-knowledge of those who actualise themselves through lasting words and deeds. It was simply a technical skill, a “know-how”. (Young, 2009: 190)

Moreover, this apparent bias against *technē* in Aristotle—the fact that it was a “technical skill” rather than being a kind of true knowledge—is not of mere historical interest. Indeed, this intuition appears equally as prevalent in contemporary philosophy, among both analytic and Continental thinkers; an emphasis upon propositionality and language that is known

¹ For a sustained description and critique of strictly propositional or sentential epistemologies, please refer to Allen, 2005: 11-59.

among philosophers as the “linguistic turn”. First used by philosopher Gustav Bergmann (Rorty, 1993: 337) and popularised by Richard Rorty’s influential anthology of the same name, the term “linguistic turn” describes a development in Western philosophy that, in the face of the perceived existential threat of other disciplines encroaching on subject matters that were once the sole domain of philosophical inquiry, sought to reduce the focus of philosophy to the analysis of language and meaning (“Whereas physics and history find conditions for the existence of actualities by discovering temporally prior actualities, philosophy can achieve autonomy only if it escapes from time by escaping from actuality to possibility. [...] The linguistic turn was [an] attempt to find a domain which would overarch those of the other professors” [Rorty, 1993: 340]), with the figures of Ludwig Wittgenstein, Bertrand Russell and Gottlob Frege as the progenitors of the movement. For his part, Michael Dummett in *Frege: Philosophy of Mathematics* argues that the linguistic turn emerged as a direct product of the claims present in §62 of Frege’s *The Foundations of Arithmetic*, wherein Frege, having established that numbers, being a kind of non-sensible class of objects, are only made available via the *context principle*: “never [...] ask for the meaning of a word in isolation, but only in the context of a proposition” (*The Foundations of Arithmetic* via Crary and Read, 2000: 323). As Dummett writes:

Frege converts the problem into an enquiry how the senses of sentences containing terms for numbers are to be fixed. *There* is the linguistic turn. The context principle is stated as an explicitly linguistic one, a principle concerning the meanings of words and their occurrence in sentences; and so an epistemological problem, with ontological overtones, is by its means converted into one about the meanings of sentences. (Dummett, 1991: 111)

Furthermore, this philosophical disposition was characterised by an understanding that the philosopher was not concerned with the mere physical properties of things, with their real qualities. Rather, the philosopher “is concerned only with the way in which we speak about them” (Ayer, 1936: 61). The propositions of philosophy “are not factual, but linguistic in character—that is, they do not describe the behaviour of physical, or even mental, objects; they express definitions, or the formal consequences of definitions” (Ayer, 1936: 62). With philosophical problems collapsed into problems of *language*, being either solved or dissolved in the means of expression, philosophical propositions become pieces in a game where players pursue an accurate understanding of the relations between ideas, as Carnap writes: “The aim of epistemology is the formation of a method for the justification of cognitions. Epistemology must specify how an ostensible piece of knowledge can be justified, that is how it can be shown that it is authentic knowledge” (Carnap, 1967: 305). Philosophy thereby became rendered the analysis of the structure of thought—the relationship between concepts that can only be properly analysed via an analysis of language and the propositions that serve to constitute it (Dummett, 1978: 458).

Consequently, it is this set of assumptions in favour of propositionality and definitionality that makes *epistēmē*, rather than *technē*, the historical locus of philosophical attention, engendering accounts of knowledge that claim that the act of *knowing* means something like being in possession the right kinds of propositions, even if those propositions are socially contingent. As Rorty notes, “we see knowledge as a matter of conversation and of social practice, rather than as an attempt to mirror nature” (Rorty, 2008: 171). Given these observations, it does not seem particularly contentious to claim that this Aristotelian value distinction between immutable, propositional knowledge and contingent praxis is one that still has a degree of currency within the academy. If *epistēmē* is immutable and propositional, then that seems to suggest that *technē*, even if it is knowledge, is knowledge of a derivative or lesser kind; a mere craft, unsuited to the sober contemplations of philosophers.

Although I am by no means in a position to threaten the validity of this account as a whole, I must confess that I find propositional or sentential accounts of knowledge insufficient in at least some respects. For this blinkered emphasis upon propositionality has other, cascading effects that rub uncomfortably against scholarship in my chosen fields of study—particularly, in this case with regards to how we think about the role intention, and thus propositionality, plays in the creation and production of objects. Consider, for instance, the orthodox account: there exist certain objects that have been made to fulfil a given purpose, and those objects have agents responsible for their creation. For example: were I a carpenter, a dining table might well be the intended product of a sequence of directed, intentional actions. The act of *making* necessarily involves intentional agency on the part of a *maker*; an intended object of this kind—a “tool”, if you like—is a kind of object that has been intentionally made to fulfil a purpose (in this case, to provide a surface upon which to eat), as distinct from any other kind of object. Accordingly we can say:

1. An object *o* is a tool *t* iff *o* is the intended product of authorial action.²

However, tools alone do not entirely comprise the sum total of products of artifice; as Hilpinen in “Authors and Artifacts” notes, objects that a person may “bring about” can be either intentional or unintentional (Hilpinen, 1993: 156). Returning again to the hypothetical table that we mentioned above, it would be inaccurate to say that, in the transition from raw materials into intended object, there is no detritus remaining from that process of transformation. Even if one plans the construction of such an item exceptionally well, such that there are no off-cuts left behind, the act of creation will invariably have unintended by-products in the form of sawdust, bent nails, etcetera. These products are plainly not naturally occurring, according to the Aristotelian schematic: although they are undeniably the

² A note on nomenclature: I will be articulating type/token distinctions by rendering types in capitals and tokens in lower case. That is to say: there is an individual object *o* that belongs to the general category of *O*.

product of intentional action, they are not the *intended products* of said action. Rather, they are a different kind of object entirely—a kind of *material residue* from the process of making. Per Donald Davidson’s philosophy of action, wherein he draws a crucial distinction between *intention* and *agency*; although an intention is the desired goal of an action, *all* products of that action are the result of the agent: “attributions of intention are typically excuses and justifications; attributions of agency are typically accusations of responsibility” (Davidson, 1980: 48). Accordingly, we now have *two* distinct categories of artificial object, both of which are the products of human agency, but only one of which is an intentional product. Finally, both tools and material residue comprise the category of *artefacts*—those objects that are unlike all other objects in that they are the product of intentional action. To wit:

1. An object *o* is a tool *t* iff *o* is the intended product of authorial action.
2. An object *o* is residual *r* iff it is the product of the intentional action of an author but is not itself the intended product *t*.
3. *T*-objects and *R*-objects together comprise the sum total of human artefacts *A*.

Finally, our rather modest list of definitions requires something in the way of a *success criterion*; it is not clear that all intentional products of intended action deserve to be considered *T*-objects.

[An] agent produces a genuine artifact only if his activity is successful in some respect and to some degree; in other words, proper authorship requires that the character of the object produced should fit the author’s intentions (to some degree) and not merely depend on them. If an author fails in every respect, he does not produce a genuine artifact, but only ‘scrap’; he is not an author of anything in the ‘intentional’ sense of the word. (Hilpinen, 1993: 160-161)

For instance: one could certainly imagine a case wherein a prospective author may attempt to create an object of a certain kind and fail in doing so; i.e.: Monroe Beardsley’s hypothetical sculptor who intends to make something smooth and blue, but instead makes something rough and pink (Beardsley, 1958: 20). That is to say: whether or not something is considered a *T*-object is not solely contingent upon whether or not it is the intended product of authorial action; rather, the potential *T*-object must be assessed against a given set of conditions *K*, the nature of which are specific to the object that was intended (K_T)—i.e.: an object intended to be a smooth and blue is judged against *K*-conditions of “smoothness” and “blueness”. Although our sculptor may have intended to produce an object of a certain kind, they have failed to do so due to not meeting the *K*-conditions. We can call this category of artefacts “scrap”.³ Accordingly, as per FIGURE 1:

³ Accounting for the exact nature of *K*-conditions is far more complex than I have presented here, but this characterisation will suffice for our purposes. However, if readers wish to

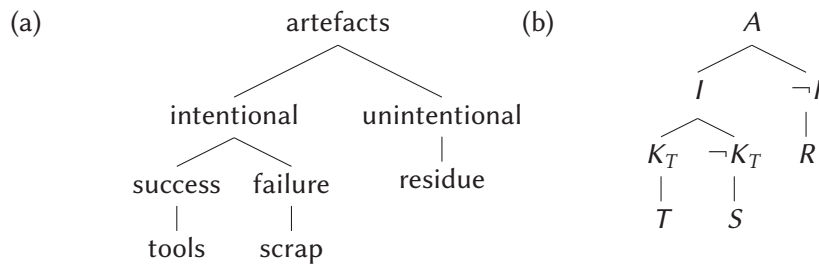


Figure 1: A taxonomy of artefacts.

1. An object o is an intended artefact i iff o is the intended product of authorial action.
2. Intended artefacts I are tools T iff they satisfy conditions K for T (K_T).
3. Intended artefacts I are scrap S iff they fail to satisfy K_T .
4. An object o is residual r iff it is the product of the intentional action of an author but is not itself an intended artefact I .
5. T -objects, S -objects and R -objects together comprise the sum total of human artefacts A .⁴

Furthermore, this kind of classical organisational structure can be co-opted to pull additional weight, as the introduction of intention places each of the component parts of the taxonomy into some kind of causal order. Given that intention is the phenomenon that catalyses the sorting of A -objects into their respective taxa, we can speak of intention as a kind of first cause when articulating the orthodox position; intention prefaces production, which itself prefaces intentional and unintentional products, etcetera. With intention as the *primum movens*, a kind of organisational flowchart makes itself available to us, as per FIGURE 2. As we can see, a causal characterisation of artefact production—in addition to adhering broadly to orthodox positions within the philosophy of technology and philosophy of action—also serves to illuminate the means by which by-products can be repurposed into products. For instance: imagine for a moment that, in a fit of gastronomic zealotry, you have decided to make a poppy seed cake slathered in an orange glaze. In the making of said cake, you inevitably also produce an amount of organic detritus—excess poppy seeds, egg shells, unused orange peel. Were you to throw out this detritus, this material would be mere residue; an R -object by the above taxonomy. However, if I were to place this organic matter within a compost bin for later use upon my garden, I will have *re-intentioned* the object, starting the cycle anew; I will have commenced production of a new product (compost) with its own by-products

consult a more sophisticated schema (though utilising a distinct nomenclature and organisational structure), please see Hilpinen, 1993.

⁴ Of course, one could very easily further speciate these taxa—in the instance, for example, that someone wished to differentiate art objects from design objects. However, at this point in our analysis this rendering of the taxonomy of artefacts will suffice.

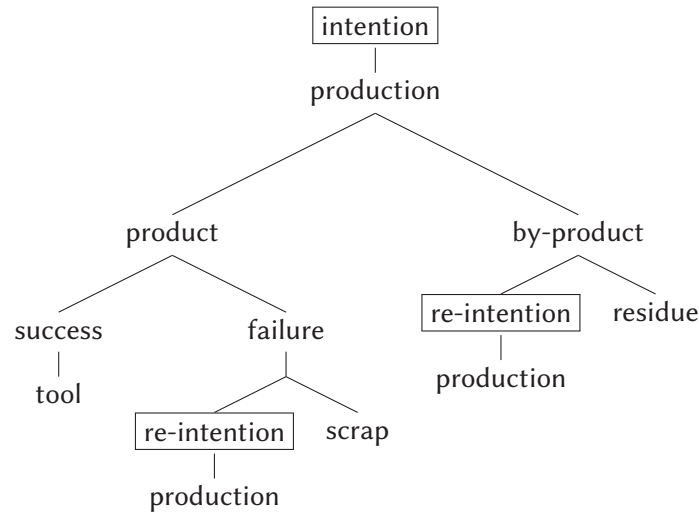


Figure 2: A flowchart of artefact creation.

(heat and carbon dioxide), and so on, *ad infinitum*. Moreover, the same is true if I were to reuse a prior failure—say, by serving the half-cooked batter of my poppy seed cake as an exotic mousse—that would also constitute an instance of re-intention. A real-life example: in 1968, Spencer Silver, whilst trying to create a super-strong adhesive, accidentally developed a glue that was pressure-sensitive, reusable and had low adhesion. Although initially seen as useless, the glue was eventually repurposed for stationary—and thus the Post-it note was born.

The crucial idea appears to be purpose. As artifacts, artworks are things largely made on purpose by agents. Understanding them that way, we take them in terms of purposes. Thus a first intentional result: since artworks are artifacts, they are perceived and comprehended in terms of agency, and their relevant features are taken under intention, in the sense of being there on purpose, normally for purposes. (Maynard, 2012: 738)

However, despite the fact that this kind of account has a kind of undeniable totalising elegance, there is at least one observation that one can make as to why we might want to reject this analysis. Consider that in FIGURE 2, intention prefaces production in all cases, as intention becomes the marker by which we can categorise and speciate our artefacts. Although convenient, I would dispute the validity of this kind of causal story, for it casts all intention as a kind of propositional attitude: “I intend to create tool-*t*”, where tool-*t* is a specifically intended product of authorial action itself comprised of a series of propositional claims. Although many instances of production do follow this general schema—say, for instance, in the case where I successfully produce my orange poppy seed cake (*t*) after having intended to make said cake (“I intend to create *t*”). The *t* that I intended to make has identity with the *t* I made; I made the kind of cake that I intended, for I did not intend to make any other kind of cake. However, is this the case in all

instances of artefactual production? I would argue that this is plainly not the case. Consider the following: imagine that you are a poet, and you feel the urge to write a long and beautiful poem: it would be a rare poet indeed who knows what the end of a poem is before she reaches it, and it would be a rarer poet still who is in full possession of the poem inside her head before she puts pen to paper.⁵ In cases such as these, it seems clear that although it might be accurate to say that “you intended to make an object of type-*T*” (“you intended to make a work of art”), it would be inaccurate to claim that “you intended to make *t*” (“you intended to make *that* work of art”), because you had no such explicit intention. To conflate the two seems to make some kind of error by confusing the *type* of thing that an object is with specific instances or *tokens* of that type.

David Pye’s tragically under-utilised work *The Nature and Art of Workmanship* is in many respects a response to this problem, and in doing so helpfully distinguishes between what he calls the *workmanship of certainty* and the *workmanship of risk*. Pye argues that the workmanship of certainty describes something very similar to the orthodox case we described above, with intention as a kind of propositional attitude: “I intend to create *t*”. He characterises the workmanship of certainty as being the kind of workmanship presenting in quantity production, with its “pure state in full automation”; the craftsman has in his or her possession the full *knowledge* of the artefact’s final form. Pye continues: “In workmanship of this sort the quality of the result is *exactly predetermined* before a single saleable thing is made” (Pye, 1968: 4-5, emphasis mine). We could say that instances of workmanship of certainty would constitute most of the things that one would encounter in a big city in the 21st century. The computer on which I am writing—a mid-2011 MacBook Air—is fundamentally similar to any other mid-2011 MacBook Air, for it is a product of a highly automated process that has explicit and precise ends. “I intend to create *t*” is possible, because there is some kind of indexical relationship between the object that is intended and the object that is produced, which has the corollary effect that all *ts* produced in the mode of the workmanship of certainty are *identical*. Andy Warhol makes a typically ironic comment in this vein:

What’s great about this country is that America started the tradition where the richest consumers buy essentially the same things as the poorest. You can be watching TV and see Coca-Cola, and you know that the President drinks Coke, Liz Taylor drinks Coke, and just think, you can drink Coke, too. A Coke is a Coke and no amount of money can get you a better Coke than the one the bum on the corner is drinking. All the Cokes are the same and all the Cokes are good. Liz Taylor knows it, the President knows it, the bum knows it, and you know it. (Warhol, 1977: 100-101)

⁵ Paul Valéry is said to have once remarked “A poem is never finished; it is only abandoned”.

The workmanship of risk, however, is a rather different beast. Unlike the “exactly predetermined” results of the workmanship of certainty, the workmanship of risk describes the process of *craftsmanship*, wherein “the quality of the result is not predetermined, but depends on the judgement, dexterity and care with the maker exercises as he works” (Pye, 1968: 4). If one is making a chair by hand, or assembling a sculpture out of refuse, or writing a poem, one is engaging in a kind of dynamical practice described by the workmanship of risk. Although we can say “I intend to create a *T*” (say, a chair) and subsequently produce examples of *t* (kinds of chairs), there is no implication that each *t* is identical to the other. Rather, there are multiple possible outputs: t_1 , t_2 , t_3 , etcetera—items which might share nothing beyond the necessary common properties that make something a chair. Accordingly, these results might also be of vastly different quality or worth: t_1 might barely qualify as a *T* at all, satisfying few K_T -conditions for $T(K_T)$ and is thus borderline *S*; t_2 a mundane, if serviceable example that satisfies some K_T , deserving of neither vitriol nor merit; and t_3 , a superlative example that either seems something like an ideal instantiation of *T* in that it satisfies all K_T , forces us to reconsider the boundary conditions of what it means to be an item of type-*T* (such as Marc Newson’s *Lockheed Lounge*, see FIGURE 3), or perhaps even presents such a *t* as to open up the possibility for hitherto unanticipated species of *T*.

By example, the development of the motorcycle provides evidence of this latter process in action: in 1885, Gottlieb Daimler and Wilhelm Maybach, after having developed a high-speed, compact, single cylinder internal combustion engine, constructed a two-wheeled testbed known as the Daimler *Reitwagen* in order to test the capacity and viability of this engine. Now, testbeds—what we could describe as T_1 objects—have only a certain number of *necessary* features, most of which revolve around providing a platform upon which development projects can be experimented. Any other features of this particular testbed t_1 are what we call *accidental* features: features such as, for instance, the fact that the *Reitwagen* took the form of an engine set into a two-wheeled chassis (Walker, 2006: 16-18). However, this novel form catalysed the development of a new kind of item: the motorcycle. Despite being designed as an experimentation platform for a new kind of engine, the motorcycle was a new *type* of object (T_2) with vastly different necessary features—necessary features that, moreover, were mere accidental or contingent features when on the testbed.

For these reasons, it would seem then that a strictly linguistic or propositional account is insufficient to adequately explain the both the qualities of artefacts and the kinds of knowledge that artisans have in their possession when both are working in the spirit of the workmanship of risk. It seems clear that although one can speak meaningfully of artefacts that are not themselves the instantiation of a previously-held propositional attitude (“I intend to make something of type-*T*”), orthodox accounts of propositional knowledge and the corollaries they have for questions of intention seem *prima facie* incapable of parsing cases of this kind without committing some



Figure 3: *Lockheed Lounge*, Marc Newson, 1988-1989

kind of serious damage to our intuitions about tool creation and the kinds of performative knowledge held by artisans; it appears strange to argue that the bodily, performative knowledge of how to create things of a certain type is not “knowledge” simply by virtue of the fact that it has no concomitant propositional content. Although certain instances of *t* are the clearly articulated products of a propositional attitude, it seems quite perverse to think that all tool creation is the product of a clearly defined intention lest we end up excluding those cases where no such clearly defined intention is present; that is, the very quality that defines the workmanship of risk. Indeed, in cases like this, propositionality itself starts looking problematic: whereas one could potentially, in the case of “I intend to make *t*”, argue that “*t*” exists as a series of propositional claims which is then instantiated by virtue of the process of production, there is no clear means by which the dynamically rendered products of the workmanship of risk are able to be similarly described. Clearly this is something of an issue.

2.2 *The Premodern Prometheus*

It is widely known amongst palaeoanthropologists—just as it is widely ignored by philosophers—that there is a substantial differential between the emergence of hominin tools and the development of language. According to current scholarship, language use in humans developed somewhere between 50,000 to 200,000 years ago, and certainly not before that time (Diamond, 2006: 141-167). Furthermore, by “language” we do not mean something like animal communication, for they lack the requisite sophistication and grammatical structures; even animals with quite sophisticated forms of communication such as prairie dogs cannot compare.⁶ However, animals like prairie dogs differ from us in one crucial aspect: unlike human beings,

⁶ And prairie dogs are truly remarkable—recent studies by animal behaviourist Constantine Slobodchikoff, among others, suggest that prairie dogs are not only capable of identifying

prairie dog communication is inextricably indexical to the world. When a prairie dog cries “Coyote!”, there is no possibility that the prairie dog could be indicating anything other than that fact that a coyote has entered its field of vision. Conversely, human beings find ourselves with the ability to transcribe objects with respect to one another (“There is a leopard behind that tree”), with respect to spatio-temporality (“I encountered a leopard last year whilst on safari in Tanzania”) or even with respect to our own mental structures (“Imagine that you are facing a hungry leopard”).

The reason we can perform these feats that prairie dogs cannot is that we have developed the heady joys of grammar and syntax—that lexical syncategoremata that facilitates the development of formal structures in natural language.⁷ It must be made clear: what prairie dogs do is not speech in any recognisable sense. Unlike natural language, animal communication is comprised of strings of lexical items that operate without inflection, casing, conjugation or grammatical particles. Accordingly, it lacks syntax: grammatical rules are not hard-coded into animal communication as they are in natural languages. For example, whereas casing dictates the grammatical function of a noun in the sentences of natural languages (viz.: when a noun is in the nominative case, it operates as the subject of a verb, as opposed to being the object of the verb, i.e.: “I kicked Donald” rather than “Donald kicked *me*”), there is no such formal structure present in animal communication. That is to say: within animal communication, indexical items exist discretely of one another, unable to interact in any meaningful sense. Although the sum total of those indexical items may be enormous, they do not comprise a system by virtue of their number. Inert, they cannot speak to one another without the presence of a linguistic aether. However, with the introduction of grammar, the systemic quality of natural languages erupts: no longer need we suffer the indignity of referring only to a specific spatiotemporal co-ordinate. The qualitative difference between natural languages and animal communication is nothing less than the fact that language is an open system, whereas animal communication is no system at all: thanks to the syncategoremata, we have potentially unlimited capacity to juggle and order signs as they refer to objects. It is *this* capacity, unique to humans, that developed somewhere between 50,000 and 200,000 years ago.⁸

Of course, this fact alone tells us nothing. However, it is a curious fact that recent scholarship suggests that material culture has origins far earlier than those of language. Consider: once upon a time, palaeontologists

potential predators at distance, but also capable of identifying and reporting the species, size and speed of those predators (Slobodchikoff, 1991).

7 A syncategorematic term is a word that cannot serve as the subject nor the predicate of a proposition, but can be used with other terms to form a proposition.

8 “The screaming vervet performs no speech act. The calls are isolated signals, fixed sequences without the syntax of a sentence. There is no recursion, that is, no units recurring in combination; no grammatical or ungrammatical combinations; no marks of plural or tense. Vervet calls apparently operate as Darwin thought—the caller’s spontaneous emotional expression has become an adaptive signal for everybody else. All a monkey can do with this system is involuntarily express a discriminating fear of predators and, being monkeys, raise a false alarm to manipulate others” (Allen, 2008a: 29).

decided to differentiate stone tool-using species from non-stone tool-using species by including the former within the clade *Homo*, with the earliest species within the genus being *Homo habilis*, or “skilful man”. However, evidence discovered in certain African Oldowan sites in 1996 cast doubt upon this narrative, resulting in the surprise discovery of *Australopithecus garhi* (“*garhi*” means “surprise” in the local Afar language)—a seeming missing link between Australopithecine forms and more modern *Homo* forms (Susman, 1987). With the earliest of these Australopithecine stone tools dated at approximately 2.6 million years old (Plummer, 2004: 118), it seems fair to assume that purposive non-stone tool-use was prevalent within earlier Australopithecine genera (*Australopithecus* and *Paranthropus*, though some also allow for the inclusion of *Kenyanthropus*) somewhere in excess of three million years ago. This of course would seem to suggest that material culture pre-dates language—even according to the most conservative estimate—by some 2.4 million years.

These two dates mean nothing on their own without additional explanation, but they do pose a question: is the right kind of complex, intentioned tool use a precondition for the development of language, or are the facts unrelated? This is a rather difficult problem, and one clearly impossible to test, but is language without tools even available to us as a conceptual possibility? Certainly some philosophers think so, though they may apply strict caveats. Don Ihde writes: “it might be possible for humans to live non-technologically as a kind of abstract possibility—but only on the condition that the environment be that of a garden, isolated, protected, and stable. The price for such a non-technological existence is to be enclosed. Here would be the “milieu of nature” in purer form” (Ihde, 1990: 13). Although we will return to Ihde as some length later in the piece, the assumption that humans qua linguistic beings could conceivably evolve without developing a kind of substantive material culture is an interesting one. Are these two dates—200,000 years ago, 2.6 million years ago—accidental and unrelated, or do they bespeak a deeper process?

In this section I will be arguing for the latter option: specifically, that tool use in hominins serves as a *precondition* for language, and that it is an error to believe that the latter can develop in the absence of the former. To this end I refer to the work of Barry Allen in his book *Knowledge and Civilization* and its sequel, *Artifice and Design* (Allen, 2005, Allen, 2008b). According to Allen, it is the case that the kind of tool-use conducted by human beings is categorically distinct from tool use in other animals: although it is true that chimpanzees hunt termites with twigs and sea otters crack abalone on rocks, what human beings do is qualitatively different from the way animals use tools. Unlike animals, human beings have the capacity to make tools with other tools: rather than just using what is on-hand as a chimpanzee would, we will consciously, and with intent, craft a tool in order to realise a given outcome. Moreover, this appears to have been no less true in the prelinguistic Palaeolithic: we have an abundance of evidence that the tools of Palaeolithic man, even prior to the development of language, were

carved with explicit uses in mind—hand axes were carved for bludgeoning, cutting, skinning, chopping and a host of other uses, and their intended use is evident from their form. This, according to Allen, raises an interesting possibility: that the utility of any given artefact relies upon it belonging to a larger ecosystem of mutually contingent artefacts.

Allen contends, when he speaks of an ecosystem of “mutually contingent” artefacts, that words are relevantly similar to our tools and devices in that they have a kind of grammar or organisational syncategoremata. In much the same way that Noam Chomsky, along with Marc Hauser and W. Fitch, claimed that recursion is the property that distinguishes animal communication and natural language (Hauser, Chomsky, and Fitch, 2002), so too is Allen claiming that the mutually contingent relationships that hold between our artefacts differentiates human and animal tool use; they are artefactual examples of what Chomsky, quoting William Humboldt, described in language as “the infinite use of finite means” (Chomsky, 1996: 8).⁹ That is to say: by smashing two rocks together I can make a sharper rock; with that sharper rock I can kill a deer; with that deer I can make clothes to keep me warm and delicious food to eat. Like orphaned words, most of our tools do not make sense unless embedded within a matrix of other, complementary tools, with the exception of certain baseline examples (for instance, a shovel): a needle cannot be used as a needle without a thread; a mobile phone cannot be used as a mobile phone without a satellite; a microwave dinner is going to taste even more like cardboard without a microwave. To quote Allen, it is not “to make something facilitate (as chimpanzees do); it is to take up a facilitating artifact that has already been made and made available in an economy of socially complementary action and technically complementary tools” (Allen, 2008a: 73). Just as our words require syntactical arrangement in order to make sense, so too do our tools require a syncategoremata of their own.

Moreover, Allen argues, human beings are alone in possessing an artefactual syncategoremata, just as we are alone in possessing a true language. Although there are plenty of species of animal that engage in what looks like purposive, recursive tool-using behaviour, they are not actually being capable of tool-use in the way of which Allen speaks. Borrowing a rather whimsical term from Douglas Hofstadter’s column in *Scientific American*, Allen describes these ostensibly intelligent behaviours as exhibiting the property

⁹ According to Chomsky, it is linguistic recursiveness that guarantees the modularity and infinitude of language. That is to say: Chomsky argues that it is recursion in language that allows me to substitute pronouns for nouns, or allows me to embed simple sentences—say, “Ryan has had a long week” or “Ryan would very much like a beer”—into a third sentence, “Ryan is an ugly bag of mostly-water”, thereby enabling me to render a recursive sentence: “Ryan, who is an ugly bag of mostly-water, has had a long week and would very much like a beer”. However, in order to render these statements adequately, we are in need of a grammar or a syncategoremata; unless one is articulating a purely indexical correlation between token and world (“Arrgh! Leopard!”), words are unmoored from use unless they are embedded in some kind of complementary semiotic system. Although there are things to which words may refer, beyond these indexical base cases a word requires some kind of context in which to be understood.

of *sphexishness*: that is, the degree by which behaviour is simply determined (Hofstadter, 1982: 20-29). The name itself draws its inspiration from the behaviour of the wasp *Sphex ichneumoneus*, its oddly mechanistic hunting and burrowing behaviour having been described by Dean Woodridge in 1963:

When the time comes for egg laying, the wasp *Sphex* builds a burrow for the purpose and seeks out a cricket which she stings in such a way as to paralyse but not kill it. She drags the cricket into the burrow, lays her eggs alongside, closes the burrow, then flies away, never to return. In due course, the eggs hatch and the wasp grubs feed off the paralysed cricket, which has not decayed, having been kept in the wasp equivalent of deep freeze. To the human mind, such an elaborately organised and seemingly purposeful routine conveys a convincing flavour of logic and thoughtfulness—until more details are examined. For example, the Wasp’s routine is to bring the paralysed cricket to the burrow, leave it on the threshold, go inside to see that all is well, emerge, and then drag the cricket in. If the cricket is moved a few inches away while the wasp is inside making her preliminary inspection, the wasp, on emerging from the burrow, will bring the cricket back to the threshold, but not inside, and will then repeat the preparatory procedure of entering the burrow to see that everything is all right. If again the cricket is removed a few inches while the wasp is inside, once again she will move the cricket up to the threshold and re-enter the burrow for a final check. The wasp never thinks of pulling the cricket straight in. On one occasion this procedure was repeated forty times, always with the same result. (Woodridge, 1963: 82)

This is the definitively sphexish act: despite a level of complexity that appears to presuppose a premeditated method, the behaviour of the wasp makes it apparent that the wasp is in the grips of a series of inflexible stimulus-response events. Although we are faced with a black box schema with regards to the wasp’s mental states, the fact that varying inputs do not result in varying outputs strongly suggests that the wasp is incapable of anything that we could justifiably consider an instance of tool-use: there is no capacity for improvisation, no deference to circumstance and no evidence of a system of mutually contingent devices.¹⁰ Insofar as Allen is concerned, most examples of “tool use” in the animal kingdom qualify as examples of sphexishness for this fact. Although animals can and do act upon their environment, they do so in a way that is inflexibly instinctual, rather than being the product of learning (whether by trial and error or by pedagogy), investigative manipulation or higher cognitive processes. Moreover, most instances of animal instrumentalisation, like examples of animal

¹⁰ A note on nomenclature: a black box is a system or object where it is only possible to see inputs and outputs; the contents of the black box are opaque to us. Although we might be able to extrapolate the contents of the black box by virtue of assessing those inputs and outputs, doing so is very much an exercise in abductive reasoning.

communication, are entirely indexical structures: although they operate as a form of “artifactual denotation”, these instruments have no capacity to mutually interact, as they are not embedded within a socio-cultural economy of artefacts (Allen, 2008a: 73). This socio-cultural economy is the artefactual syncategoremata in which instances of animal instrumentation use must be embedded in order to be considered instances of tool use, the first step of which simply being an indicator of the degree of improvisation readily apparent in the use of a tool. Unlike human behaviours, highly sphexish behaviours have no such apparent improvisational capacity. These are the behaviours that are “instinctual” in the most pure sense of the term: although these behaviours may be ostensibly indicate some degree of plasticity (the mating ritual of the bowerbird, the maternal habits of the gastric breeding frog, the predation methods of *Portia* spiders), they are actually sophisticated products of a simple behavioural algorithm that is brutally and inexorably mechanistic.

If you may excuse me an analogy: at the beginning of *2001: A Space Odyssey*, humanity’s simian ancestors were preoccupied with inoffensively sphexish behaviours. Eating, sleeping, mating and avoiding predation comprised the sum total of their activity. However, upon discovering and touching the obsidian monolith, these early apes developed a new and deeply potent quality: with the swelling chords of Strauss’ *Also Sprach Zarathustra* providing appropriate auditory context, an ape picks up a bone and proceeds to bludgeon one of his colleagues to death. This symbolic instance provides us with an example of the proto-tool: an instance of improvisational, inferential reasoning, a “learned, individual, relatively unsphexish use of a peripheral effector” (Allen, 2008a: 73). Behaviour of this nature is found throughout the animal kingdom: octopuses are capable of removing the lids from screw-top jars, New Caledonian crows will improvise hooks out of pieces of wire, your dog learns how to open your back door by jumping onto the door-handle. Because it is learned, whether by virtue of learning by observation or their own mental prowess, this behaviour is no longer purely sphexish. If we transmit multiple inputs into our black box schema, we find multiple outputs: moreover, the quality of these outputs indicates the both a capacity for improvisation that is missing in animal instrumentation and evidence (by virtue of observing a deference to circumstance and available resources) an understanding of an ecology of mutually contingent artefacts. Moreover, we are the only genus within *Animalia* that has graduated to full tool-use (though I would allow for the inclusion of *Australopithecus garhi*); it is only in *Homo* that we find evidence of truly complementary tool-using behaviours.

Just as there is a qualitative difference between the cries of a gibbon and a doctoral thesis by virtue of the presence or not of syncategoremata, the distinction between animal tool-use and human tool-use is indicative of a similar relationship. In each case—animal cry and animal tool—the object of our analysis is purely indexical: each item is tied inextricably to a given functional arrangement. As in the case when a gibbon shrieks “Leopard!”,

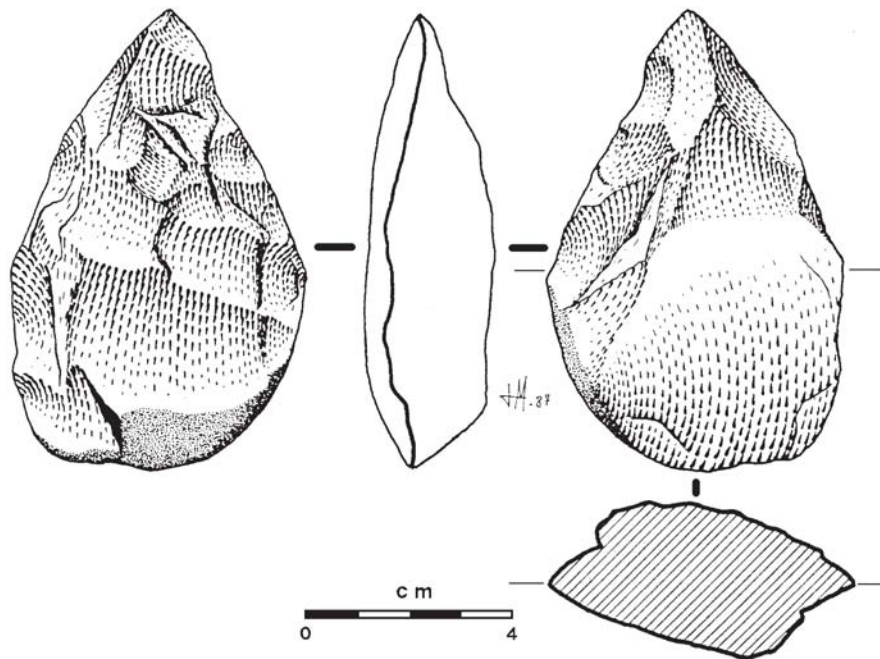


Figure 4: Biface illustration of Oldowan tools

when a chimpanzee wields an insect lure, the only function of the insect lure is as an insect lure. The animal tool, unlike our own, lacks “instrumental potential”; it has a function rather than a “range of functionality” (Allen, 2008a: 73)—it has finite uses for finite means. This range of functionality is made evident in what Allen calls a tool’s “functionless functionality”, a concept denoting that objects are only awarded utility in being used in an intelligent and broadly intentional manner. The human hand is an example of such an entity, as are the human speech organs. Both objects have a wide range of application and utility, but neither is defined by this range of application and utility. A tool—any tool—is merely an extension of this quality: for something to be a tool, it must facilitate or augment the functionless functionality of our own organs. A tool has no intrinsic purpose, and it can only be considered such when it is exercised or utilised in some respect. Without the present of a human agent, tools are mere detritus: the truncated evidence of an absent human wielder, without positive content of their own.

All implements tend to include in their appearance the invisible presence of what is needed to fulfil their function. A bridge is perceived as something to be walked over, a hammer as something to be gripped and swung. This extension is so much more tangible than would a mere association between an object and its use, or the mere understanding of what the object can serve to do. It is the direct perception completion of an object that looks incomplete as long as it is unemployed. (Arnheim, 1969: 89-90)

So, by Allen's account a tool is an artefact composed by and of other artefacts. Both animal tools and human tools are characterised by the fact that they are manipulated. However, whereas animal tool is a manipulation informed by sphexish behaviour—or perhaps in marginal cases, a relatively unsphexish behaviour informed by cognition and circumstance—for something to be considered a “true” tool it must be an “economic artifact that has already passed through other hands using other tools, and was purpose-made to amplify and extend the hand's functionless functionality” (Allen, 2008a: 73). This is an important observation: whereas animal tools exist as isolated instances, true tool use is predicated upon some form of pre-existing socio-cultural or economic context—in effect, some strange species of artifactual syncategoremata—to be definitionally considered as such. Human tool use, unlike animal tool use, is never private: although one can engage in solitary tool use by virtue of being alone when one commits the act, our very use of the tool is premised upon other human beings. Although you may sing to yourself in the shower, those artefacts you are manipulating—the faucet, the soap, Céline Dion's “My Heart Will Go On”—are the products of hundreds of thousands of years of technical and artistic development. Donne was correct when he wrote that no man is an island, for even capacity to render such a statement is inherently and necessarily predicated upon the right kind of socialisation. Accordingly: language and tools are relevantly similar in that they are both premised upon having the capacity and materials to engage meaningfully in some kind of recursive economy of complementary action. In the case of our artefacts, they must be able to *work together*; unlike the termite twig of a chimpanzee, our tools imply the existence of other tools.

One can very easily imagine Allen endorsing the Latourian distinction between *sociogram* and *technogram* (Latour, 1987: 138-140)—that is, according to Latour, the claim that all artefacts or technological objects should be properly understood as being comprised of both a sociogram (the external network of commitments and alliances that a device has with other devices and with human users that shape the social role of that artefact) and the technogram (the internal network of commitment and alliances that comprises the technical aspect of the artefact). So, for instance, in the case of an automobile, it should be understood both in terms of the means by which it engages with the social sphere and other artefacts, i.e.: civic infrastructure, road rules, licensing requirements, cultural depictions, etcetera, and as an artefact comprised of a collection of given complementary parts, i.e.: wheels, drive shaft, carburettor, air-conditioning system, etcetera. Accordingly, whereas a chimpanzee tool is a purely indexical object, human tools (whether shovel or space station) must be understood not only in terms of the internal network of commitments and alliances that comprise the technical aspects of the artefact, but also with regards to the external network of

commitments and alliance that a given artefact has with *other* artefacts—and with human users that shape the social role of that artefact.¹¹

But does this relevant similarity, taken in conjunction with the historical evidence, indicate that tool use is a precondition for language? Indeed, I believe it does. Consider: for something to be a linguistic symbol, it must be “a sign that refers in two dimensions simultaneously, referring to nonlinguistic things or events and referring to other symbols” (Allen, 2005: 196). So, not only does the word “giraffe” refer to a nonlinguistic thing—namely, a tall, silly looking ruminant with large spots and a long neck—it also must refer to other other linguistic symbols that observe the same semiological structure. So, in order to say something like the “giraffe eats leaves”, the words have to be both referring to nonlinguistic entities, events or actions (giraffes, eating and leaves) and also amenable to being organised according to an external grammar, lest we find ourselves with something baffling and inscrutable (“leaves eat giraffes”, “eat giraffe leaves”, “eat leaves, giraffe”, etcetera). Although many animals demonstrate understanding of how sounds can refer to non-linguistic things (as in the case of a howler monkey warning of a leopard) very few animals have an understanding of grammar; certainly none with as sophisticated an understanding as human beings, and none to my knowledge that have not been trained by a human being.¹² The development and application of linguistic signs requires that speakers be able to sustain the idea that lexemes have simultaneous relationships, and that doing so allows us to enter what the realm of symbolic reference; animals, having no capacity to do so, fail to grasp this “dual system of references” (Allen, 2005: 196).

Full-blown language, with all of the efficiency and structural refinement of modern speech, is probably a gradual development,

11 It is obviously true that languages are no different, at least in this sense. Consider the word “bifurcation”, as it might apply to a split in the road: although technographically simple, my decision to use the word “bifurcation” as opposed to, say “fork” cannot help but say something that the sound “bifurcation” alone cannot: whether or not I use the word out of euphony, pretension or precision, my lexical choice carries inevitable social baggage. Or, perhaps more dramatically: *shibboleth*, made famous in the Book of Judges: technically modest, it could be pronounced beginning with a /s/ or a /ʃ/. However, the sociogram for *shibboleth* was a more fraught proposition: in addition to signifying the part of a plant containing grains, it also indicated where a person hailed due to the noted pronunciation difference—much to the chagrin of the 42,000 Ephraimites killed who were unable to render the unvoiced palato-alveolar approximate: “And the Gileadites took the passages of Jordan before the Ephraimites: and it was so, that when those Ephraimites which were escaped said, Let me go over; that the men of Gilead said unto him, Art thou an Ephraimite? If he said, Nay; Then said they unto him, Say now Shibboleth: and he said Sibboleth: for he could not frame to pronounce it right. Then they took him, and slew him at the passages of Jordan: and there fell at that time of the Ephraimites forty and two thousand” (Judges 12: 5-6, KJV).

More recently, in the 1970s, Ulster loyalist gang the Shankhill Butchers did something similar, cornering passersby and ordering them to recite their alphabets. In the event that their victims said the “haitch” (/“hertʃ/) associated with a Catholic education rather than the “aitch” (/“ertʃ/) of a Protestant education, they would find their throats slit and their bodies rudely dumped in an alley.

12 Animals such as Alex the African Grey Parrot are among those I would cautiously consider to have some grasp of linguistic syncategoremata.

but what makes it the evolution of *language* was one step, the greatest from an evolutionary point of view, and it had to have happened quickly, indeed, all at once. (Allen, 2005: 196)

Appealing to the archeological evidence, Allen argues that language, unlike material culture, developed extremely rapidly after a given point some tens of thousands of years in the past. Furthermore, contra popular wisdom on the subject, Allen claims that language, unlike material culture, was not an adaptation—at least, not in the sense of a value-adding change that evolved in response to prevailing conditions (Allen, 2005: 198)—and indeed, it has been argued that it is evolutionarily and *theoretically* impossible that language is a development of that kind (Zahavi, 1993: 227-230). Language is certainly not required for thought as Allen notes—after all, it would be absurd to claim that those who crafted the Oldowan tools were incapable of thought simply because they were pre-linguistic¹³—nor is it clear that it would have had immediate utility for our *Homo* ancestors. Rather, language is an example of what Steven Jay Gould calls a *spandrel*, or an example of *exaptation*: “traits not ad-apted, or selected *for* what they do, but are, potentially and contingently, adapted *to* functions for which they are recruited, or exapted, after the anatomical fact” (Allen, 2005: 189)—an exaptation, in our case, of the development of a massively developed prefrontal cortex. Moreover, language exapted in order to help conserve that quality we had already developed: the “order of socially complementary action” offered to us via our artefactual syncategoremata.

Lie and alternative, inherent in language [...] pose problems to any society whose structure is founded on language, which is to say all human societies. I have therefore argued that if there are to be words at all it is necessary to establish *The Word*, and that *The Word* is established by the invariance of liturgy. (Rappaport, 1979: 210-211)

Allen claims that it is likely that the origins of language lie in communal ritual: largely invariant codes and practices that serve to signify and enact the acceptance of knowing participants. Following the cues of anthropologist Roy Rappaport, Allen argues that ritual becomes a kind of cultural adhesive, whereby social obligation is encoded into public memory: “Although ritual performance cannot ensure compliance, it irrevocably establishes obligation, and although it cannot eliminate insincerity, it makes it loathsome, furtive and dangerous” (Allen, 2005: 200). Although only one theory of early human language acquisition among many, Rappaport’s theory has the benefit, in my view, of seeing language as but one aspect of a broader *symbolic culture* wherein institutional facts may be collectively affirmed. Much the same way that the play of children is a means by which social norms are developed and consolidated, so too are ritual and religion

¹³ For those interested in reading further on pre-linguistic thought, one could do worse than beginning with José Luis Bermúdez’ work in *Thinking Without Words* (Bermúdez, 2003).

activities of the exact same kind: “Language, play and ritual are cut from the same cloth. Religion is not a different thing from childhood pretend-play: it is pretend-play taken seriously and enjoyed also by adults” (Knight, 2010: 208).

Moreover, it was the development of material culture that engendered this development. As our tools became more complex it became necessary that our ancestors began to specialise; although it may well have been possible that a single human would have been fully conversant in the minutiae of collecting berries and fruit, starting fires, fishing, making stone arrows and knives, hunting large mammals, one assumes that early humans, like modern-day chimpanzees, observed at least a partial division of labour (Boesch and Boesch, 1981). As our tools and our praxes became more specialised, one can only imagine that early humans began to rely upon one another more heavily—economically, socially and pedagogically—and accordingly, we encountered the imperative for establishing conventions and social norms. In an early barter economy, it behoves participants to collectively observe social norms lest they catalyse the dissolution of those norms. Faced with the task of ensuring that our fellows would not behave unexpectedly, and would instead act according to social convention, ritual was our valiant attempt to collectively address this concern. This intersection of symbolic culture and ritual also suggests the development of moral standards and public ethics: just as certain kinds of social arrangements can be instantiated and institutionalised socially—a marriage, say, or a public oath—so too could certain practices such as murder or theft be rendered unambiguously verboten, with any guilty parties subject to social sanctions.

Although these rituals were almost certainly at least partially constituted by gestures, it is Allen’s claim that early ritual was also comprised of “canonical words”, much like the “I do” of a wedding ceremony, or the “Amen” that concludes a prayer. Unlike the gibbon’s shrill shriek, these words—though tied to the circumstances in which it was uttered—have a kind of symbolic, mutually understood content. For the first time, words are gifted with the ability to *carry symbolic meaning*, thus opening “the door to exploring other things that can be done with words”. With time, the rituals themselves became more complex, and grammatical structures appeared mapping our language to our world and our objects in more and more particular ways. What was once simple and indexical became sophisticated and polysemous; words could mean different things, understood only by context. And so, let out of its lamp, the multivalent, grammatical genie cannot be stuffed back in: “Ritual practice is the matrix, the setting, in which full-blown language first appears. Its dramatic usages establishes speech as a social fact and conserve the structural constants that reliable use and acquisition require” (Allen, 2005: 201).¹⁴

14 Those interested in reading further on Rappaport’s theory and its subsequent iterations could do worse than the following: Rappaport, 1999, Power, 1998, Lewis, 2009, Watts, 2009, Enfield, 2010 and Knight, 1998. We can also find an earlier iteration of this position in Walter Burkert’s influential *Homo Necans*, first published in German in 1972: “If man nonetheless survived and with unprecedented success even enlarged his sphere of influence, it was be-

2.3 *The Performance of a Lifetime*

Having argued that the human being's linguistic capacity is itself necessarily premised upon practising the right kind of recursive tool-use, Allen then argues for an epistemology that is both *performative* and *artefactual*. That is to say: by Allen's account, knowledge is not something you *have*, but rather something that you *do*. He compares it to art in this respect: although I have no doubt that philosophers of art and art theorists of a more post-modern bent will find themselves at odds with this account, Allen happily declares that art is a form of "success"; a kind of "sophisticated perceptual innovation". It must be impressive, both perceptually and aesthetically, even if it is not to one's taste (I, for instance, am not terribly partial to abstract expressionism or colour field work, though I admit the quality of the expression). By this metric, "bad art" is an impossible contradiction (Allen, 2005: 66). Knowledge is something like art in this respect. Allen states that it must be a "form of success, a superlative performance". Let us unpack these three terms—*performance*, *success* and *superlativeness*—each in turn:

1. *Performance* indicates that the action is a kind of intended action, either of the kinds "I intend *t*" or "I intend *T*". Writing a poem, catching a train, designing a bridge and eating a hamburger are all kinds of performances, as all of which are kinds of intentional action. Accordingly, performance itself is a rather unremarkable quality or event: to call something a "performance", *p*, is simply to situate it within the broader context of intelligible human action.
2. *Success* is a measure by which one can measure the efficacy of performance. If eating a hamburger is a kind of performance, then the success criteria for the performance in question are rather modest: not choking, for example, and being forced to rely on the fact that your dining companion is familiar with the Heimlich manoeuvre. Conversely, building a go-cart or solving a quadratic equation have rather more rigorous success criteria that are conditioned upon the kind of performance that is being conducted: in the instance of the former, a go-cart must track straight, must be evenly balanced and must adopt an appropriate form in order to meet a compromised position between speed and not upsetting the vehicle; in the instance of the

cause in place of his natural instincts he developed the rules of cultural tradition, this artificially informing and differentiating his basic inborn behaviour. Biological selection rather than conscious planning determined the educational processes that helped form man, so that he could best adapt himself to his role. A man had to be courageous to take part in the hunt; therefore, courage is always included in the conception of an ideal man. A man had to be reliable, able to wait, to resist a momentary impulse for the sake of a long-range goal. He had to have endurance and keep to his word. [...] Above all, the use of weapons was controlled by the strictest—if also artificial—rules: what was allowed and necessary in one realm was absolutely forbidden in the other. A decision point is the very possibility that man may submit to laws curbing his individual intelligence and adaptability for the sake of societal predictability. The educative power of tradition attempts to bind him in an irreversible process analogous to biological 'imprinting' (Burkert, 1983: 18-19).

latter, the solution to the equation is subject to the internal logics and boundary conditions posed by mathematical systems. Clearly then, just as in the orthodox picture of tool-creation described above any given performance has an accompanying set of K -conditions by which we can assess whether or not a given performance has succeeded or failed: a performance p succeeds if it satisfies conditions k for p (k_p).

3. *Superlativeness* is the most difficult of the three terms to define, as it is the most obviously qualitative. Although we might want to say that success is also a kind of qualitative measure, or even that “success” and “superlativeness” are describing the same thing, it seems clear that most instances of successful performance are not so: if I am performing in such a way as to tie up my shoelaces, whether or not I succeed in this task seems unambiguous. The tying of one’s shoelaces, just like eating a hamburger or catching a train, is merely a kind of *habit*, or reliable performance. To call this “superlative” would certainly be setting the bar too low. Knowledge instead must be “exemplary”; to *know* is “to perform with notable accomplishment in a range of artefacts” (Allen, 2005: 67). This is because success is merely a condition that must be met for a performance to be superlative: although one may succeed at a task, it does not mean that the performance was superlative; however, in order for my performance to have been superlative, I must have at least succeeded at the task. The performance itself must be something *extra*; a kind of $p+$.

A “superlative performance” then is a successful performance of a certain kind; to expand upon the nomenclature provided in CHAPTER 2.1, it is an instance of knowledge (n) if and only the exemplary performance satisfies the success conditions: $p+$ is n iff $p+$ meets k_{p+} . The performance cannot merely be a habitual performance, but must instead be somehow exemplary, whether by virtue of being innovative, elegant, or meeting some other like criterion. Moreover because knowledge is a superlative performance, the form that it takes is not in principle similar with other instances of knowledge, much the same way that pieces of art are not identical. To recognise knowledge forces one to be methodologically casuistic: although there appears little essentially in common with, say, utilising the naturally acoustic properties of cardboard to make an iPod speaker out of a toilet roll and Einstein developing his theory of general relativity, they are both superlative accomplishments: they take what is given and, with that material, create something exemplary. Indeed, it seems very much like Allen’s “superlative performance” is a certain kind of Pye’s *workmanship of risk*: if the results of workmanship are predetermined and the outcomes entirely known (“I intend to create t ”), it is a product of the workmanship of certainty, or what Allen would describe as mere habit. Conversely, superlative performances ($P+$) are not of this kind, for it is not known whether or not the $p+$ will satisfy its k -conditions. Although not all examples of the workmanship of

risk qualify as superlative performances for obvious reasons—some may fail entirely, or others may only marginally satisfy their *k*-conditions—it seems clear that superlative performances must be a kind of workmanship of risk.

There are two additional things to note, here. The first is that Allen's artefactual epistemology poses an explicit challenge to Gilbert Ryle's now-orthodox distinction between "knowing how" and "knowing that", finding the differentiation unhelpful. Although there is an intuitive appeal in arguing for the separation of knowledge-how (performative) and knowledge-that (propositional) by saying that they are different *kinds* of knowledge—I know *how* to ride a bike, make a sandwich and tell a joke; I know *that* the world is round, Napoleon I was Emperor of France and $3 + 5 = 8$ —Allen's epistemology does not allow for the distinction. That is to say: if knowledge of all kinds is a type of superlative performance, then knowledge itself is "in no case propositional" (Allen, 2005: 67). Rather than propositions themselves being knowledge, they are instead *expressions* of knowledge: just as the toilet roll speakers are the artefactual expression of a superlative performance, so too can a proposition—say, $E = mc^2$ —be the artefactual expression of a superlative performance; the performance being the process by which the theory was developed. The second thing of note is that if the method by which one recognises knowledge is casuistic, then we are precluded from stipulating criteria by which superlative performances can be recognised. Of course, that is not to say that they are *unrecognisable*, just as new artworks are not unrecognisable; rather, because superlative performances are necessarily novel we are equally necessarily unable to predict the forms that they will take, and thus as a corollary are unable to provide predictive criteria: "There is no analytically recoverable unit, no common denominator recurring in each instance of knowledge, by virtue of which performance and artifact are considered superlative. [...] New knowledge implies something the likes of which have never been seen, and one cannot law down criteria for recognizing something the likes of which have never been seen" (Allen, 2005: 69). The true test of knowledge lies not just in the efficacy of the performance of the artefact, but is also determined by whether any other artefact has been efficient for the same reasons, just as the true test of an artwork lies not only in its beauty (such as, say, in a paint-by-numbers of Monet's *Reflections of Clouds on the Water-Lily Pond*), but in it being a sophisticated perceptual *innovation*; the first toilet roll iPod speakers were exemplary because nothing like that had ever been done before.

Of course, we might reasonably find these claims rather problematic, with knowledge perception seemingly being conflated with something very like personal taste. However, although "taste" is indeed relevant, Allen certainly wants to avoid being branded as a subjectivist in this regard. Instead, in a rather Humean turn, he claims that assessing the success of knowledge, like assessing the success of art, lies in recognising the sense of *aesthesis* (perceptual sensation or feeling) that the artefact elicits. Just as Hume argued that, in the absence of strictly determined criteria by which one can evaluate matters of taste, we must instead rely on the fact that "the harmony

of verse, the tenderness of passion, the brilliancy of wit, must give immediate pleasure” (Hume, 1975: 171), Allen argues that knowledge and beauty are relevantly similar in that their appeal lies in their ability to immediately sensibly cohere: “Coherence cannot be delimited by analytically necessary and eternally sufficient conditions because such definitions define determinate concepts, while coherence is what Kant called an indeterminate concept, the concept of a concept” (Allen, 2004: 262). However, Allen’s claims cut far deeper than Hume’s: although Hume would agree that our capacity to appreciate coherence is not, Allen argues, contingent upon rational or logical values, Allen is at his most daring when he proceeds to claim instead that our logical or rational values are themselves underwritten by *aesthesis* itself: “Coherence is made and not found, invented and not discovered, and an artifact of embodied, historically contingent understanding, not the poetic mimesis of an intrinsic nature. It never comes naturally, innocently, without art” (Allen, 2004: 263). Moreover, also unlike Hume, Allen does not think that discerning knowledge is the sole purview of those true judges who do more than merely evaluate “the grosser and more palpable qualities of the object” (Hume, 1875: 278), but that knowledge can be evaluated against the broader traditional of accomplishment, rendered into four measures of performance:

1. *Appropriateness* to both use and users, considered against criteria of affordability, ergonomics and efficacy. David Pye in *The Nature and Aesthetics of Design* describes all designed objects as being failures, “either because they flout one or another of the requirements or because they are compromises, and compromise implies a degree of failure” (Pye, 1978: 70), and it seems that by the “appropriateness” criterion, Allen is attempting to provide a metric by which we can assess which artefacts fail the *least*.
2. *Design quality* is the measure by which an artefact can be said be superlative (as described above), and is thus primarily a measure of innovativeness or novelty.
3. *Fecundity* is the measure by which an artefact can be assess as a “source of fruitful, inventive extrapolation or inspired innovation in adjacent fields of theory and practice” (Allen, 2005: 72). Allen uses the examples of a sailing ship, being the “matrix of a great body of wider knowledge, artifact, technique, and culture” (Allen, 2005: 73). Something like the photographic image could also be considered to be such a technology, as it has substantively altered our perception of the world in a number of ways: not just in broader epistemic and existential senses—as we will discuss in CHAPTER 4 and CHAPTER 5—but also in the sense that photographic and cinematic technologies have meaningfully impacted social policy, crime and punishment, information technology, news and current affairs, entertainment and the lived environment more broadly. The photographic image, like

other fecund artefacts, has found wide and unanticipated application across a vast number of fields.

4. *Symbiosis* indicates an artefact's "contribution to the expansive coherence of a built environment" (Allen, 2005: 73). It not only describes those artefacts we would prefer to retain (the wheel, fire, ceramics, metallurgy, writing, underarm deodorant), but is also a measure of the impact that the particular artefact has had upon our lifeworlds. In the case of the photographic image, it could be considered a highly symbiotic artefact as it seems not only desirable to keep, but also because it has catalysed such a radical shift in our lived experiences.

Allen's claims are in essence two-fold. The first, as per the prior section, is that we, as human beings, are necessarily constituted by our technology, for our technology is that which facilitates that other necessary condition for humanhood: the ability to use and navigate symbolic references in a systematic and intelligible way. The second is that these artefacts are what constitute our collective knowledge, being the right kinds of superlative performance; by virtue of populating the world we inhabit, our technology becomes importantly world-constituting. Those things that we traditionally call knowledge—propositional claims—are instead mere expressions or outcomes of a deeper, performative epistemology that is bound inextricably with artefacts, culture and praxis. These artefacts interact with one another; they imply complementary use; they knit together in an intelligible way by being embedded within a socio-cultural economy of artefacts. The shape and structure of the modern city implies the automobile, just as the automobile implies the knowledge of metallurgy, of aerodynamics, of concessions to the public interest. We cannot *know* the world without our objects; it is our objects themselves that provide us with epistemic orientation.¹⁵

Accordingly, "superlative artefactual performances" are those specific performances or processes that supplement or otherwise add to the set of artefacts that already constitute our material culture, and thus evidence of our knowledge. When Allen speaks of the habitual use of an artefact (say, using a shoelace to tie one's shoe) he is speaking of praxis involving use of the object *as intended*. Meanwhile, a key aspect of knowledge creation is discovering that our objects, like our hands and our tongues, also have the unique property of "functionless functionality" that I mentioned in the previous chapter. As Michael Tomasello argues in *The Cultural Origins of Human Cognition*: although we as children may learn that certain objects

¹⁵ He shares this sentiment with Hannah Arendt: "[...] the things of the world have the function of stabilising human life, and their objectivity lies in the fact that men, their ever-changing nature notwithstanding, can retrieve their identity by being related to the enduring sameness of objects, the same chair today and tomorrow, the same house formerly from birth to death. Against the subjectivity of men stands the objectivity of the man-made artifice, not the indifference of nature. Only because we have erected a world of objects from what nature gives us and have built this artificial environment into nature, thus protecting us from her, can we look upon nature as being 'objective'. Without a world between men and nature, there would be eternal movement, but no durability" (Arendt, 2000: 173-174).

are “for” things (a hammer is “for” hammering, a screwdriver is “for” tightening screws), an integral part of the process of education, of *learning*, is discovering the multivalency of these objects. A hammer is not just “for” hammering, but can serve as a weapon should the need arise; a screwdriver is not just “for” tightening screws, but is also an extremely effective means of opening obstinate tins of paint: “[The child then] comes to see some cultural objects and artifacts as having, in addition to their natural sensory-motor affordances, another set of [...] intentional affordances based on her understanding of the intentional relations that other persons have with that object or artefact [and] the world through the artifact” (Tomasello, 1999: 85). To recognise the artefactual detritus of other humans is to be sensitive to the intention that has come to bear when the item was created, and in relaxing the strictures of artefactual denotation, the world is illuminated by the process of artefactual *manipulation*; echoing Aristotelian *technē*, we are anchored to the world by our capacity to perceive intended use, and we make knowledge by knowingly perverting the artefact towards other ends.

When Angkor Wat was rediscovered in the West by Henri Mouhot in January 1860, there was never any apparent doubt that he had encountered a artificially occurring phenomenon, despite the huge temporal and cultural difference between his time and its construction. In spite of the yawning chasm of years and culture, he still recognised that the crumbling city was the product of human hands; a mute reminder of those who had come before: “[...] ruins of such grandeur, remains of structures that, at the first view, one is filled with profound admiration, and cannot but ask what has become of this powerful race, so civilized, so enlightened, the authors of these gigantic works?” (Mouhot, 2005: 279). Despite abandonment, the temples of Angkor Wat—just like Machu Picchu, deserted by the Inca in the 1500s and rediscovered by Hiram Bingham in 1911; or Pompeii, rediscovered after 1,650 years by Rocque Joaquin de Alcubierre; or Palaeolithic stone hammers—speak of human intention, of the lifeworlds of those who created and used those artefacts. I again quote Arnheim: “All implements tend to include in their appearance the invisible presence of what is needed to fulfil their function. [...] It is the direct perception completion of an object that looks incomplete as long as it is unemployed” (Arnheim, 1969: 89-90). Just as we are constituted ontologically by our artefacts, so too are our artefacts constituted by us; without us to afford them purpose, they are mere ciphers or gravestones—mute epistles from long-dead lovers.

If today we are profoundly, vitally, irrevocably technological beings, it is not because evolution made us that way. Natural selection did not discover our capacity for the knowledge of artifacts. We did that ourselves when, well after the evolutionary emergence of our species, the cultivation of knowledge came into view as an option. At that moment biological forces like adaptation or natural selection were well and truly done with us, and the rest, which is everything, we made for ourselves. (Allen, 2005: 188-189)

And so Allen argues that our technology *is* our culture, or at least the only part that really matters; the former shapes and impinges upon the latter, changing our form of life in the process. However, this is not something to lament, as per Heidegger's maudlin rejection of the industrial world and the dangers of *das Abstandlose* (CHAPTER 3.1); rather, technoculture for Allen is "as old as the genus *Homo*, as old as language, or protolanguage, or ritual, and much older than our belated species, for whom it has become as indispensable as fresh water. The culture of artifacts is bred in our bones; we are *born* to culture; for us culture *is* nature" (Allen, 2005: 219). Civilisation, understood as the culture of *cities*, is what happens when our technoculture hits critical mass, when our artefacts become a kind of totalising meta-artefact: "A city is an architectural actuality, an immensely complex physical artifact, and today there is no way out of the urban net. There is no outside. The human future is urban so far as it can be seen at all" (Allen, 2005: 266). For Allen, unlike Heidegger, praxis and scientific perception are not two different modes of understanding being, but are instead deeply integrated and mutually constituting. Having collapsed speech into knowledge-how and thus dethroned *logos*, Allen argues that our capacity to render the world scientifically—reducing the world to a series of abstract qualities—is itself a kind of technical praxis; it is a *process* of knowledge-making.

Finally, in addition to being problematic for what we can call "conventional" epistemologies, it seems clear that Allen's story casts serious doubt upon upon the received significance of designed objects. Speaking crudely, we can distinguish between two conflicting models. The first—that which I would call the *design-as-truth thesis*, of the sort endorsed by writers and philosophers such as Robert Grudin—argues that our design objects to have some fundamental relationship with the truth. If truth "determines that our bodies do not take off into the air and float about like birthday balloons" and "asserts, without fear of contradiction, that light of a certain spectrum makes things visible, that pleasure is sweet and pain is a drag"; and given that truth (so the argument goes) "lies in the rough but workable details of what we are and where we are", then our designed objects—when done well, when improving our lots and integrating seamlessly with our lives—frame "appropriate responses to the truths that nature tells us". Our objects say something substantive about our circumstances, and the best designed objects—Eames chairs, Volkswagen Beetles, Apple iPhones—mimic and emulate "natural truth by being true to nature" (Grudin, 2010: 27); by aping the world-as-given and, subsequently and presumably, the things-in-themselves. *Viz.*: if nature is the realm of givens, then the best kind of design hugs the contours of the given, revealing more of the world to us in the process, whilst bad design—and Grudin's primary bugbear, over-design—is "a pack of lies" (Grudin, 2010: 25).

The second explanation—that which I call the *design-as-palliation thesis* (David Pye is representative of this view)—argues instead that design is a palliative attempt to ease the difficulty of our passing through the world: "From the fact that deadly injury, pain and exhaustion prevent the fulfil-

ment of the universal wish for happiness, men have always tended to infer that if only life were safe, comfortable and effortless they would be happy. It does not follow. [...] But evidently this inference has largely determined our modern wishes and hence the devices which have been born of them” (Pye, 1978: 67). Because the world is a cruel and heartless place, we surround ourselves with artefacts to ease the burdens that rude circumstance has inflicted upon us; accordingly, our artefacts accrue “palliative devices” that make achieving our desired goals easier with each passing iteration. Pye himself uses the example of a typewriter:

All that remains after a typewriter has been used [...] is marked paper. That is the result of the typewriter, and the only parts essential to it are the type-bar ends, the paper, the ribbon and the roller. With those and some laborious care you could type a letter. The rest of the machine is an accretion of subsidiary palliative devices—keys, carriage and all the rest—which give economy, i.e., eliminate labour and care and give speed. (Pye, 1978: 68)

In a palliation model, designed objects contain no presumption of truth, but are merely the product of pragmatic inquiry: the best object is that which has the best possible practical consequences. If life is indeed hard, and design is indeed palliative, then the best objects are those which succeed in making life better than all of those other objects to which it can be relevantly compared: i.e., contrasting the Eames Lounge Chair above with the unforgiving wooden school chairs of my childhood. As a result it would not be an error, I think, to consider the design-as-palliation thesis the articulation of a profoundly existential form of scepticism. Indeed, it seems almost pessimistic; a kind of pessimism that claims we are restricted to looking through a glass, darkly. Although the design-as-truth thesis seems to promise the possibility of accessing profound truths about the world via our objects (though exactly what that means remains unclear), the claims of design-as-palliation theses are far more modest: as imperfect beings in an imperfect world, all we can offer ourselves are salves to the existential agonies that life offers. However, even these salves are compromised. Pye writes that all of our objects are inevitably failures; technique and design will always outstrip our capacities to realise them (whether these imposition be those of cost, inability to realise materials, the laws of the universe, etcetera): “The requirements for design conflict and cannot be reconciled. All designs for devices are in some degree failures, either because they flout one or another of the requirements or because they are compromises, and compromise implies a degree of failure” (Pye, 1978: 70).

Curiously however, Allen’s epistemology provides a means by which we can *synthesise* the two methods. Although Allen certainly seems that he would endorse David Pye’s fundamental claim that our objects in one way or another ease the pain of being alive, his epistemology seems to suggest that in palliating those pains something is revealed. In turning knowledge

into a kind of artefactual performance, it seems clear that for something to be truly palliative it must also be *truth-bearing* and *world-constituting*—indeed, they simply seem like different ways of describing what is fundamentally the same quality. Our objects are of a far more profound importance than either the as-palliation or as-truth story would have us believe: being so integral to our lifeworlds, crudely reducing them to a single facet of that experience is a crude and unwelcome gesture. Instead, our artefacts provide the nacreous surface that constitutes our phenomenal world whilst easing our passing through the noumenal realm: “To drink water from a waxed paper cup on the highway and to drink it from a crystal goblet are different gestures. In the first case, you almost forget that you exist as you drink. In the second [...] you realize that you have in your hands an instrument that makes you reflect upon how you are living at that moment” (Ettore Sottsass, quoted in Levine, 2006).¹⁶

2.4 *Between Artefact & World*

I believe that Allen makes a powerful case for his peculiar epistemology: an epistemology that I would endorse for the simple reason that it allows us to speak meaningfully about artefact creation in instances of the workmanship of risk; it allows for superlative performances that nonetheless do not have predetermined ends. However, even assuming we buy into Allen’s epistemology, a question nonetheless remains about some of the implications of these claims, particularly with regards to how they overlap with metaphysical claims. That is to say: it seems clear that we need to provide some account of how the world is, if only so that we have some kind of coherent characterisation of what it is exactly that an artefact captures. Accordingly, if we are to buy into Allen’s model, what can we subsequently say about Allen’s metaphysics? Allen himself does not seem disposed to provide any coherent picture, believing it beyond the purview of our epistemic capacities: faced with the prospect of trying to get underneath the artefacts, as it were, and obtain the world beneath, his response is quick, uncompromising and brutal: “The end of human life is the end of the world, beyond which is—*nothing*. Human existence and activity make a world where otherwise there is—*nothing*. Kick a stone if you like. Slap the table if it helps. That does not prove that in the absence of human beings such a thing as a stone or a star *exists*” (Allen, 2005: 30). Given that Allen’s epistemology is our material culture and its byproducts, he seems to categorically deny the possibility of achieving any great metaphysical insights, of understanding the universe as it would exist without our presence. Allen’s artefactual episte-

¹⁶ I am also reminded of the opening passage from *The Long Goodbye*: “The first time I laid eyes on Terry Lennox he was drunk in a Rolls-Royce Silver Wraith outside the terrace of The Dancers. [...] There was a girl beside him. Her hair was a lovely shade of dark red and she had a distant smile on her lips and over her shoulders she had a blue mink that almost made the Rolls-Royce look like just another automobile. It didn’t quite. Nothing can” (Chandler, 1992: 3).

mology seems to have quite clear boundary conditions; asking for knowledge of necessary truths—of *epistēmē*, of obtaining the Kantian *Ding an sich* (things-in-themselves)—is well beyond our meagre capabilities. Nonetheless, I believe that we can still draw some tentative conclusions.

If we are to endorse Allen's epistemology, we can make the minimal claim that knowledge, that which constitutes the human lifeworld, has some kind of *supervenience* relation with the things-in-themselves, in that the things-in-themselves determine (completely or incompletely) the form of the artefacts that comprise said lifeworld.¹⁷ Supervenience itself is a central notion within the broad field of 20th century analytic philosophy, being first used in its contemporary philosophical sense by R. M. Hare in his 1952 *The Language of Morals*. However, supervenience theses did not begin with Hare; in a paper published in 1984, he acknowledged that he first encountered the term at Oxford in the 1940s, though he could not recall who utilised it (Hare, 1984).¹⁸ Regardless of the origin of the concept, supervenience describes a relation wherein, in a given system, certain low-level properties of the system necessarily inform the structures of certain high-level properties of the system. For example, Brandon Carter's weak anthropic principle—"we must be prepared to take account of the fact that our location in the universe is necessarily privileged to the extent of being compatible with our existence as observers"—is a kind of supervenience thesis, for it supposes that human life is supervenient upon the structural arrangement of the universe (Carter, 1974). Were the universe structured in a different way, it would necessarily impinge upon either the quality, quantity or overall existence of observers. Or, articulated more broadly: supervenience is the observation that there cannot be an *A*-difference without a *B*-difference. Using consciousness as an example, as Chalmers does: if one were a physicalist, say—that is, holding the belief that there are no non-physical properties or qualities in the universe, because all positive properties globally and metaphysically supervene on microphysical properties—one would hold the belief that consciousness is reductively explainable in terms of the low-level properties of the system. That is to say in this case: consciousness is supervenient upon cognitive processes or states, which are themselves supervenient upon certain biological facts, which are then supervenient upon certain physical facts, *ad infinitum*.¹⁹

17 For the following discussion I have broadly followed the cues of Jaegwon Kim and David Chalmers (Kim, 1993a, Kim, 1993b and Chalmers, 1996).

18 Moreover, although he did not use the term, G. E. Moore describes a very similar phenomenon in his 1922 book *Philosophical Studies* (Moore, 1922).

19 As one might expect of a key term in contemporary analytic philosophy, there has been an enormous amount of debate sustained concerning the ways by which supervenience can be specified. Though I am for the most part both uninterested and unqualified to weigh in substantively on such matters, I am happy to dumbly accept that supervenience can be split into two dyads: *local* and *global* supervenience, and *natural* and *logical* supervenience, thus rendering potentially four different categories: local/natural, local/logical, global/natural and global/logical. That said, although a legitimate position to hold, this is by no means a universally accepted view; whereas Sider, 1999, McLaughlin, 1997b and Stalnaker, 1996 would broadly agree with this notion, Kim, 1993a argues that global supervenience is little more than a form of logical or strong supervenience, resulting in only two categories;

Understood accordingly, I think it fair to claim that the artefacts that comprise our epistemology and our lifeworlds—the B-facts—are themselves supervenient upon the A-facts of the world; certainly, it seems obvious that the B-facts of our artefacts could simply not *be* without a universe capable of supporting them. However, the relationship that holds between these A-facts and these B-facts remain unclear; namely, as to whether the supervenience relation between the two is, according to Chalmers' nomenclature, *logical* or *natural*:

The distinction between logical and natural supervenience is vital for our purposes. We can intuitively understand the distinction as follows. If B-properties supervene logically on A-properties, then once God (hypothetically) creates a world with certain A-facts, the B-facts come along for free as an automatic consequence. If B-properties merely supervene naturally on A-properties, then after making sure of the A-facts, God had to do more work in order to make sure of the B-facts: he had to make sure there was a law relating the A-facts and the B-facts. [...] Once the law is in place, the relevant A-facts will automatically bring along the B-facts; but one could, in principle, have had a situation where they did not. (Chalmers, 1996: 38).

Consequently, logical supervenience demands that if I assume certain A-facts about a given system, then those logically supervenient B-facts are *necessary* products of the A-facts. As a result, we might say for instance that the motions of interplanetary bodies are themselves logically supervenient upon Newtonian laws of gravity and motion, and are necessarily so; although we obviously need to posit certain material conditions being met (i.e.: the presence of planets), there is no need on our part to posit the existence of an additional *law or rule* tying together classical mechanics with Mercury's orbit around the sun. However, it seems clear that the relationship of our artefacts with the world is not the same kind of relation; although the B-facts of our artefacts are indeed contingent upon the A-facts of the world and human intention, it seems bizarre to think that the A-facts *necessarily* dictate the B-facts; although the forms of our artefacts are informed by circumstance, it seems plainly incorrect to claim that they are dictated by circumstance, as we will see in the dispute between Jürgen Habermas and Andrew Feenberg in SECTION 3.2. Although the B-facts could not be that way without the A-facts, they are by no means determined by the A-facts, indicating that the relationship between artefacts and world is one that is naturally supervenient; our artefacts are not a necessary product of the our relationship with the world but merely a contingent product.

That noted, if they are naturally supervenient, it seems clear that—as per Chalmers above—we require some additional rule or set of rules to relate the

Chalmers, 1996 seems to endorse global, logical/local and natural/local supervenience, indicating three categories; and Shagrir, 2002 and Bennett, 2003 both argue not only for strong and weak global supervenience, but also an *intermediate* form, thus rendering a grand total of *five* categories. There are more things in heaven and earth, Horatio.

A-facts of the world with the B-facts of our artefacts. Furthermore, this rule must also point to the boundary conditions of Allen's artefactual epistemology: we must not only find a means to account for the fact that not only do the A-facts exist, they are also beyond our direct access. Given those facts, it is my claim that the natural supervenience relation between artefacts and world is guaranteed by the fact that our artefacts are a nomological, *emergent* property of the relationship between the world and human intention: "If P is a property of w , then P is emergent if and only if (1) P supervenes with nomological necessity, but not with logical necessity, on properties the parts of w have taken separately or in other combinations; and (2) some of the supervenience principles linking properties of the parts of w with w 's having P are fundamental laws" (McLaughlin, 1997a: 39). These fundamental supervenience principles are not metaphysically necessitated by any other laws, as well as being temporally contingent; the B-facts at time t synchronically depend on the basal A-facts at time t and could not emerge prior.²⁰

The common characteristics [of emergence] are: (1) radical novelty (features not previously observed in systems); (2) coherence or correlation (meaning integrated wholes that maintain themselves over some period of time); (3) A global or macro "level" (i.e. there is some property of "wholeness"); (4) it is the product of a dynamical process (it evolves); and (5) it is "ostensive" (it can be perceived). For good measure, Goldstein throws in supervenience—downward causation. (Corning, 2002)

Accordingly, we can compare the qualities of Allenian artefacts to the criteria that Corning poses:

1. Instances of knowledge according to Allen's epistemology are indeed *radically novel*; indeed, as described above, radical novelty is required for something to be rightly considered an example of an exemplary performance $p+$.
2. Our artefacts, again per Allen, are mutually complementary, and constitute a socio-cultural economy of artefacts. That very mutual complementarity is what guarantees conceptual and praxical coherence amongst the emergent phenomena in this case.
3. The global or macro level of our artefacts is constituted by the sum total of human knowledge; a kind of superset constituted by all other exemplary artefactual performances.
4. Tying in with the observation made above regarding synchronicity, our artefacts—operating in response to (a) shifting base conditions,

²⁰ For more information on the subject of emergence, particularly as it relates to supervenience, please refer to Broad, 1925, Kim, 1992, Kim, 1999, Kim, 2006a, Kim, 2006b, McLaughlin, 1997a, O'Connor, 1994, Cleve, 1990 and Crane, 2001.

(b) other kinds of artefacts and (c) a broadly palliative *telos*, as per David Pye—are themselves the product of a dynamical process. Certain artefacts are suggested by certain other kinds of artefacts: the needle by the thread, for instance, or the highway by the car. Our artefactual landscape ceaselessly evolves in response to these kinds of conceptual and praxical tectonics.

5. Our artefacts are the objects of our perceptions in a very literal sense; they are the only means by which we are able to engage with the world.
6. Our artefacts have *downwards causation*; being supervenient, they do not have a merely epiphenomenal relationship with the world, but can cause material changes in the dynamics and properties of their parts. Not only does the world influence the form of our artefacts (aeroplanes, for example, are designed with the boundary conditions of the world in mind), so to do our artefacts change the basal conditions of the world—dams changing the course of rivers, built environments providing new ecologies for urbanised animal and plant species, the endemic reduction in biodiversity as a result of artefactual performances or their by-products, a reduction in glaciation and increase in mean global temperature due to anthropogenic climate change—as well as changing the way we think by enabling other kinds of hitherto-unanticipated action, as per 4.

There is, however, an *additional* property that I believe we can ascribe to Allenian artefacts: that of *irreducibility*. That is: with regards to emergent phenomena in physical or biological systems (bird flocks, termite cathedrals, snowflakes, etcetera), although the kinds of patterns that emerge are unexpected, they still nonetheless *explicable*—they are both contingent upon and deducible from lower-level phenomena (i.e.: logically supervenient). The same is not true of our artefacts. To explain: in “Strong and Weak Emergence” Chalmers examines emergent properties with respect to cellular automata, which are discrete models used in a number of academic disciplines.²¹ In essence they are quite simple: a regular grid of cells, with each cell in one of a number of finite states. Each discrete cell has a neighbourhood, defined in relation to that specific cell. The initial state of the automata ($t=0$) serves to define the starting state of each discrete cell. All subsequent states ($t=n$, $t=n+1$, $t=n+2$ etcetera, where n is greater than or equal to 0), will change the states of each discrete cell according to some function that determines the new state of each cell in terms of the current state of the cell and the states of the cells in its neighbourhood. The resulting dynamic patterns that form can be quite complex and unexpected (see FIGURE 5), and are similar in kind to reducibly emergent phenomena in the natural world.

²¹ Chalmers’ distinction between “strong” and “weak” emergence seems to carry unnecessary metaphysical baggage; the distinction I draw is between *reducible* and *irreducible* emergence.

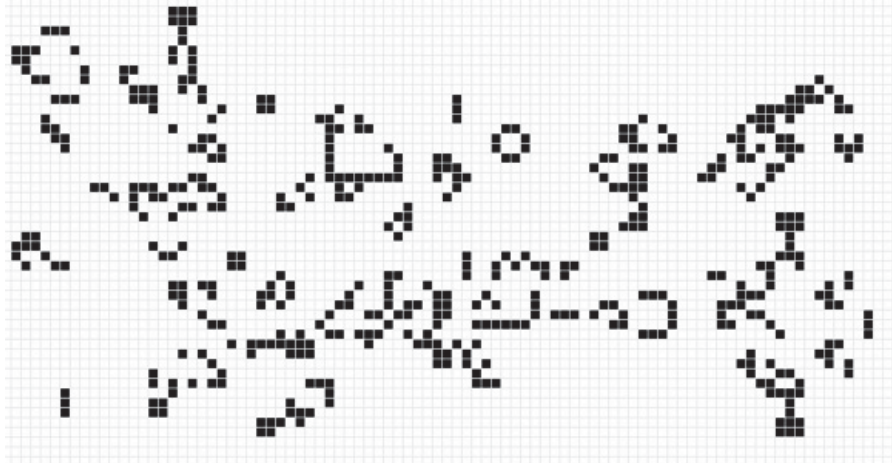


Figure 5: A single iteration of Conway's Game of Life

However, though they are unexpected, they remain explicable: although the functions governing the behaviour of the discrete cells may not be immediately apparent, they are nonetheless “straightforwardly deducible” from the set of available data (Chalmers, 2006: 245). Similarly, bird flocks, termite cathedrals, the formation of snowflakes and other emergent phenomena in the natural world are subject to similarly simple functions. Although the sum total of actions may suggest an internal cohesion or a kind of directedness, these structures are absolutely reducible to the algorithmically determined actions of those actors participating in the system—birds, termites and water molecules, respectively. Moreover, if these are examples of reducible emergence, then what constitutes irreducible emergence seems clear: if reducibly emergent phenomena are those *logically* supervenient effects that are both contingent upon and deducible from lower-level phenomena, irreducibly emergent phenomena are those *naturally* supervenient effects that are contingent upon but *not deducible from* lower-level phenomena. This being the case, it becomes apparent that our artefacts are phenomena of this kind: naturally supervenient and irreducibly emergent, with the supervenience relationship guaranteed by nomological necessity. Indeed, it seems *prima facie* unlikely that our objects are reducibly emergent properties of the system.

[One] wonders whether the question ought not to have been raised long before the level of life [...]. The question: Is chemical behaviour ultimately different from dynamical behaviour? seems just as reasonable as the question: Is vital behaviour ultimately different from non-vital behaviour? And we are much more likely to answer the latter question rightly if we see it in relation to similar questions which might be raised about other apparent differences of kind in the material realm. (Broad, 1925: 44)

C. D. Broad, in his early monograph on emergence, argues in favour of the existence of what he calls “trans-ordinal laws”: that is to say, laws that connect strata related by irreducible emergence relations: “A trans-ordinal law would be a statement of the irreducible fact that an aggregate composed of aggregates of the next lower order in such and such proportions and arrangements has such and such characteristic and non-deducible properties” (Broad, 1925: 78). It is my argument that the relationship between the A-conditions of the world and the B-conditions of our artefacts is contingent upon the existence and effect of these trans-ordinal or irreducibly emergent laws. Consider: were the relationship between our artefacts and the world reducible, this would strongly imply a kind of bilateral symmetry between the base A-conditions and the emergent B-properties; that is, with a sufficiently complete picture of the emergent B-properties we could presumably successfully extrapolate the A-conditions that gave rise to the B-properties, just as with a sufficiently complete picture of the A-facts then we can predict the emergent B-properties. Such a picture seems similar to that which is offered by Laplace and his infamous demon: given the strictly and transparently determinate relationships between all relevant facts, then it should prove possible to account for all of the constituent parts of that system if one is both in possession of and has a sufficiently sophisticated account of each of these facts.²² However, this seems likely not to be the case: we have certainly been thus far incapable of completely extrapolating the facts of the matter via our artefacts, and, as I will make clear in my section on the disagreement between Jürgen Habermas and Andrew Feenberg (CHAPTER 3.3), it is also impossible to extrapolate the specific forms of our artefacts by appealing to the rules of the world.

The absence of this apparent epistemic symmetry strongly seems to suggest that our artefacts are not reducible to the world—and indeed, this is to be expected: “The only peculiarity of [trans-ordinal laws] is [...] that we cannot possibly deduce it beforehand from any combination of laws which we have discovered by observing aggregates of a lower order” (Broad, 1925: 79); just as we are categorically incapable of isolating the B-facts in any complete or comprehensive way via the A-facts, so too are we unable provide a complete account of the A-facts even were we in possession of a complete account of our B-facts. Moreover, this outcome maps nicely onto Allen’s epistemology, for its bloody-minded pragmatism and metaphysical suspicions renders his view explicitly *not* symmetrical; though it is certainly causal, it is by no means strictly and transparently determined. In addition to superlative artefactual performances being radically novel, his claims imply that our artefacts are *categorically* irreducible to the A-facts; the world remains forever beyond our grasp. Consequently, it seems obvious that the irreducibly emergent nature of our artefacts presents an excellent reason as to why it is impossible in Allen’s view to attain any kind of complete

22 “An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom” (Laplace, 1951: 4)

or unambiguous picture of the things-in-themselves beneath the artefacts—impossible, even, to make contact with the Real in any significant, non-attenuated way.

Although Allen's description of the artefactual topography of our knowledge is, I believe, a convincing one, a significant question nonetheless remains. There is in Allen's work a certain kind of positivity: the idea that our technologies and praxes constitute our knowledge seems to testify to the fact that human beings are in some sense privileged; that we are the lords and masters of the universe, and that the things within it are only afforded importance or value because we have ascribed those qualities to those objects. Insofar as epistemologies go, it is one characterised by a certain kind of uncompromising bloody-mindedness with regards to the kinds of ontological claims we can make about the universe, as well as one that emphasises the importance of retaining awareness or prudence with regards to the development and application of our technologies: the buck starts and ends with us, and if something undesirable occurs we have only ourselves to blame. Accordingly, I do not think it inaccurate to claim that Allen's epistemology is fundamentally *optimistic*, if mediated by the acknowledgement of our own absolute culpability.

However, despite the generally empowering (if somewhat solipsistic) sentiment that underpins these kinds of assumptions, Allen is curiously silent on what is perhaps the most significant question asked by philosophers of technology more generally: to what extent do our tools present an existential threat to our lifeworlds? Allen's response seems easy enough to extrapolate: given that we are constituted by technology—we are literally made human by our tools—the question itself is something of a non-starter. The idea that technology is *threatening* seems to imply that the concept of the human is somehow distinct from the technology we wield, and Allen would almost certainly reject that assumption out of hand—indeed, would likely claim that the sentiment isn't even worth seriously entertaining. Nonetheless, we find the sentiment endlessly recur, particularly amongst those thinkers influenced by Heidegger: there is a distinct and palpable anxiety that the technology we wield—particularly modern technology—presents some kind of existential threat to our essential Being.²³

Accordingly, the next chapter is my modest attempt to trace the thread of these kinds of anxieties, beginning with Heidegger and ending with several contemporary philosophers of technology who should be understood as inheritors of his position. For although I do not believe that Heidegger and his contemporaries are correct in thinking that technology is existentially threatening—indeed, I strongly suspect that the problem, at least as posed, is entirely incoherent—I nonetheless cannot escape the suspicion that they

23 In this respect, it is not dissimilar from other critiques of technology, particularly those broadly associated with the green anarchism movement—though obviously the tenor of those criticisms is necessarily different based upon their ontological and political commitments. Although we will not be dealing of criticisms of this type here, for more information please refer to Kohr, 1957, Ellul, 1964, Mumford, 1970, Illich, 1973, Schumacher, 1973, Goldsmith, 1988, Postman, 1993, Sale, 1996 and Kaczynski, 2008.

have diagnosed a legitimate source of tension with regards to our relationships with technology and the world. Although the answer may not be the one they provide, the fact that these fears resonate—and continue to resonate—so powerfully suggests to me that Allen’s epistemology is in some important sense incomplete: there is an experiential and phenomenological aspect to living with technology that we should not and cannot ignore.

3

NO MAPS FOR THESE TERRITORIES

As scientific understanding has grown, so our world has become de-humanized. Man feels himself isolated in the cosmos, because he is no longer involved in nature and has lost his emotional unconscious “identity” with natural phenomena. These have lost their symbolic implications [...] and with it has gone the profound emotional energy that this symbolic connection supplied. [...] Our language no longer participates mystically in the things it describes. We have “matter” instead of “the Great Mother” and “intellect” instead of “the Father of All.” All our thoughts have to fit the limited ego-rationality of man and this denial of the unconscious puts modern man at the mercy of his psychic “underworld.” (Jung, 1964: 95)

3.1 *Existence without Distance*

Phenomenology is, in brief, the study of *appearances*, of things as they appear to consciousness. Such was Husserl’s motivation when writing the *Logical Investigations* and the *Ideas*—following in the footsteps of Brentano, Husserl was attempting to rigorously reconcile idealism with empiricism by speaking of things as we are made aware of them: as worldly objects perceived by a transcendent ego: “A new fundamental science, pure phenomenology, has developed within philosophy: This is a science of a thoroughly new type and endless scope. It is inferior in methodological rigor to none of the modern sciences. All philosophical disciplines are rooted in pure phenomenology, through whose development, and through it alone, they obtain their proper force” (Husserl, 1981b: 10). Although there is undeniably a world beyond our perceptions, just as there is an internal universe comprised of mental structures, it is in consciously apprehending the things in the world and making sense of them that both the internal and external worlds become constituted *for us*. Whatever passes for our world-views are, although contingent upon the world being a certain way, cobbled together from the perceptual adumbrations we have of the things in the world. Husserl writes:

The unity of a “world view” must confirm the world-possibility in all further fashioning of world-apperception—as *the* possibility and the universum of open possibilities which make up a fundamental composition of the world’s actuality. The core of actual experience is optically what is experienced of the world from this or that side; and it possibly already obtains as known

actuality on the basis of the experiential synthesis in harmony. The core becomes as an experiential core of the world, a core of what is predesignated by the world and as an open range of possibilities: and this signifies a range of harmonious possibility to be iteratively continued. The world is [...] constituted according to horizons in which something existent is constituted as actual in being-possibilities predesignated at any time; the world is predesignated and is subsequently conceptualized and expressed in judgments by ontology [...]. (Husserl, 1981a: 223)

Husserl originally developed phenomenology out of the philosophy of Franz Brentano, being particularly inspired by the concept of *intentionality*, or “about-ness” (when I perceive an object in the world, I *intend* the object; my perception is “about” the object). Husserl’s phenomenological method was developed in order to provide something of a third method of inquiry between the ancient divide of materialism and idealism: rather than committing to a reductionist account of the world as a collection of objective properties—or conversely, committing to the concept of the world as a collection of mental properties—Husserl’s phenomenological program sought to provide an anti-reductionist means of analysis that could serve as a meaningful alternative to the two methods. Invoking the Ancient Greek concept of *epoché* or “bracketing”, Husserl asks that we attempt to “bracket” or suspend judgement about the world in order that we may concentrate exclusively on the deep analysis of mental experience. As Rüdiger Safranski writes: “[Husserl’s] great ambition was to disregard anything that had until then been thought or said about consciousness or the world [while] on the lookout for a new way of letting the things [they investigated] approach them, without covering them up with what they already knew” (Safranski, 1999: 78). Moreover and in addition, Husserl argues that this discrete, bracketing entity—this “irreducible, inquiring kernel of transcendental consciousness” as I wrote earlier—serves to *constitute the objects of the world*. That is to say: the object of perception—that which is being phenomenologically *intended*—is transformed into or collapsed with the *thought* of the object of perception (what Husserl calls *noema*. According to Husserl, we can no longer take faith in the fact that our naïve understanding of the world as having an independent belief beyond our perception (the “natural attitude”), but instead must commit to the concept of the world as a mess of acts of *Sinngebung*, or “sense-bestowal” by a collection of intentional agents (Dodd, 1996: 420).¹

Conversely, unlike Husserl’s transcendental phenomenology, Heidegger applies a phenomenological reading to our relationships with technology; rather than writing about the means by which Being is partially comprised by perceptual phenomena, Heidegger’s Being is comprised of a tension between our bodies and our artefacts: hammers, tables, windmills. Further-

1 Although I have attempted to reconcile Husserl’s sophistication with my need for parsimony, prudent readers could do worse than to return to his *Ideas* itself (Husserl, 1983).

more, by virtue of providing this analysis, Heidegger serves as a distinct philosophical antecedent to those writers and theorists who cite the danger of technology to the human's individual Being; although his work may not be explicitly referenced, nor may his conceptual descendants retain his idiosyncratic nomenclature or his theoretical concerns, Heidegger's influence upon analyses regarding the potential for technology to impinge upon humankind's Being is inescapable. Technology, despite being integral to the means by which we gain access to the world, nonetheless becomes a threat to our bodily instantiation, and not just in the rather banal way that a sword or a gun proves a threat; rather, the danger is existential, providing a distinct and very specific kind of challenge.

Within Heidegger's phenomenology, our bodies are characterised as dialectics between *inside* (mental processes) and *outside* (the external world), and personhood is presumed to reside in that tensile liminality; to be a Being is to have a certain kind of body. It must possess an existence that is instantiated bodily—an existence possessing certain sensory and mechanical apparatuses that allow that body to both experience and impinge upon the world in a meaningful way. Moreover, the nature of a human's being is not purely physical, but rather necessitates the presence of an appropriate form of mind that is somehow associated with the body; a mind which is first capable of sorting and correlating received sense data and then applying those findings to direct its respective mechanical apparatuses. Plainly however, this is an insufficient account of our embodied existence. Although necessary, these conditions are not sufficient for an entity to be considered to have Being, for these necessary conditions also describe the experiences of any number of lived bodies. If nothing else, it is true of other higher vertebrates: although one might need to give a rather creative account of how a paramecium has the kind of embodied existence articulated above, it requires none at all to say that a pig or an elephant has embodied existence: “it is clear that in the animal world as a whole the way in which the animal is bound to its environment is almost as intimate as the unity of the body to itself” (Heidegger, quoting F. T. Buytendijk in Safranski, 1999: 199). Heidegger's response to this quandary is to postulate an additional quality that is held by embodied beings and not by “world-poor” entities such as animals or “worldless” things such as rocks and chairs: “We can formulate these distinctions in the following three theses: [1.] the stone (material object) is *worldless*; [2.] the animal is *poor in world*; [3.] man is *world-forming*”² (Heidegger, 1995: 177). This world-forming quality is the infamous *Dasein*—that is, the property in the human's Being that allows us to consider our own Being (Heidegger, 1962: 68). Animals, being world-poor, are categorically not *Dasein* for the simple reason that they merely accept the world as-given; although they can certainly navigate the world, the world is merely a collection of sensible surfaces, rather than an entity upon which they can act in a meaningful way— a distinction premised upon the observation that animals and human beings have differing capacities for intentional action.

² That is to say: he is *world-constituting*.

Indeed, it is *Dasein* that differentiates Heidegger's scholarship from that of his teacher, Husserl. Whereas Husserl in *Logical Investigations* claims that philosophy should renounce theory and simply analyse those things presented to the irreducible, inquiring, *intending* kernel of transcendental consciousness, Heidegger instead seeks a being that is both pre-theoretical (though nonetheless with an intuitive grasp of the a priori structures that facilitate modes of Being) and also has a non-intentional openness to the experience of the world—with the latter of these concepts eventually becoming rendered *Being-in-the-world* and the former becoming *Dasein* itself. *Dasein* is something of a curious beast: curious in both its uniqueness and curiosity as its *modus operandus*; it is the wont of *Dasein* to test and probe the world, deriving theories and seeking inconsistencies: “*Dasein* exists. Furthermore, *Dasein* is an entity which in each case I myself am. Mineness belongs to any existent *Dasein*, and belongs to it as the conditions which make authenticity and inauthenticity possible” (Heidegger, 1962: 78). A compound derived from the German *da*—there; *sein*—being, Heidegger's *being there* is neither purely object nor subject, but something that transcends the Cartesian subject/object schema entirely; a Being-in-the-World (*In-der-Welt-sein*) that is capable of “intending” other entities—its perception is “about” the entities it perceives. In this sense, *Dasein* functions in opposition to (or is at least adjacent to) the Beings of other, non-intending entities:

What is meaning by “Being-in”? Our proximal reaction is to round out this expression to “Being-in ‘in the world’”, and we are inclined to understand this Being-in as “Being in something” [...] as the water is “in” the glass, or the garment is “in” the cupboard. By this “in” we mean the relationship of Being which two entities extended “in” space have to each other with regards to their location in that space. [...] Being-present-at-hand-along-with in the sense of a definite location-relationship with something else which has the same kind of Being, are ontological characteristics which we call “categorical”: they are of such a sort as to belong to entities whose kind of Being is not of the character of *Dasein*. (Heidegger, 1962: 79)

Those beings that do not have *Dasein* are “categorical” in the sense of their Being being concrete rather than existential, perceptual or praxical—and this is where early Heidegger commences his discussion of tools. All objects that are without *Dasein* are either ready-to-hand (*Zuhandenheit*) or present-at-hand (*Vorhandenheit*), and each category reflects the specific means by which we approach and interact with the world. Breaking with Husserl, Heidegger claims that objects are not dealt with by having them in consciousness, but rather are taken for granted as items of everyday use. To illustrate this point, Heidegger asks us to imagine that we are using a hammer, perhaps to built a bird-box or to fix a creaky step; in using the item without hindrance, the item itself remains concealed to us as long as it successfully serves to facilitate a certain kind of act. Curiously though,

the invisibility of ready-to-hand objects serves to illustrate the nature of its Being; in being able to be ignored, the hammer is acting according to its Being: “the less we just stare as the hammer-Thing, and the more we seize hold of it and use it, the more primordial does our relationship to it become, and the more unveiledly it is encountered as that which is is—as equipment” (Heidegger, 1962: 98). That is to say, the hammer’s “equipmentality”—our capacity to use the hammer as equipment via the very act of hammering itself—reveals the manipulability (*Handlichkeit*) of the hammer (Heidegger, 1962: 98). Meanwhile, those objects that are present-at-hand are, by Heidegger’s reckoning, “broken tools”: imagine that, whilst in the middle of making your bird-box, the hammer cracks, or you crush your thumbnail after a savage, if uncoordinated, blow. The hammer is no longer concealed, but rather abuts onto our phenomenological field in a particularly violent manner, and you are struck with its physical qualities: the heft of the object, the unwieldy mass of the tempered steel head, the wooden haft shiny with age and slick with sweat. The hammer makes itself known to you as a collection of physical qualities which you are then able to isolate and analyse. By becoming visible to you it becomes present-at-hand, and in doing so, its surface properties become explicitly accessible.

Objects are not cleanly divided into ready-to-hand and present-at-hand, however. The same hammer, when repaired, freely returns to its former ready state: “this conspicuousness presents the ready-to-hand equipment as in a certain un-readiness-to-hand. [...] Pure presence-at-hand announces itself in such equipment, but only to withdraw to the readiness-to-hand of something with which one concerns oneself—that is to say, of the sort of thing we find when we put it back into repair” (Heidegger, 1962: 102-103). The two categories are better understood as modes of being: objects, when ready-to-hand, are cryptic yet exemplify their Being; objects, when present-to-hand, are sensible to *Dasein* yet do not articulate their Being: “No matter how sharply we just *look* at the ‘outward appearance’ of Things in whatever form this takes, we cannot discover anything ready-to-hand” (Heidegger, 1962: 98).

However and despite this fact, Heidegger believes that the modes of inquiry in the post-industrial era have committed an error in not properly understanding this state of affairs; he characterises the realms of science and philosophy as mistaken in only examining and quantifying that which is present-at-hand. When we cultivate genetically engineered tomatoes or create new subatomic particles or extrapolate the mass and distance of stellar entities, we are engaging with the sensible qualities of entities to the exclusion of their ontological properties. Heidegger characterises this position as “ontotheology”—the position that declares that there are certain privileged entities that can be used to explicate all other entities, “whether it be water, atoms, perfect forms, substance, God, monads, subjectivity or power.” To render the world explicable by reducing it to its surface properties, “[t]o single out one entity or type of entity as an explanation of the entire cosmos is the same bad step [...]. All of these options amount to treat-

ing one specific type of present-at-hand entity as the incarnation of being itself” (Harman, 2009: 20). Effectively, Heidegger claims that the pursuits of science and philosophy have seen fit to remove questions of ontology from their fields of inquiry altogether—an error he considers particularly grievous. Indeed, as Graham Harman explains in “Technology, Objects and Things in Heidegger”, science and philosophy are crudely reductionist disciplines in that they do not go “deep enough”; in collapsing the world into a set of sensible, present data, the mystery of Being is rudely and fatally eviscerated (Harman, 2009: 20).

Heidegger’s criticism of the valorisation of presence-at-hand in philosophy and the physical sciences at the expense of ontology in *Being and Time* serves to pave the way for his analysis of technology in his later works. Beginning with the 1949 Bremen Lectures and concluding with “The Question Concerning Technology”, Heidegger’s later work is less concerned with hammers than it is with sophisticated technological apparatuses such as hydroelectric dams. However, as Graham Harman argues—contentiously, I admit, but in a move of which I broadly approve—it would be an error to consider this evidence of a thematic break in Heidegger’s work; rather, even despite the different nomenclature and shifting objects of analysis, his later works serve to further elaborate upon his analysis of the general ontology of tools (Harman, 2009: 17). We find a similar sentiment in Allen’s brief treatment of Heidegger in *Knowledge and Civilization*, when he argues that Heidegger’s emphasis upon the “givenness” of Being over rude ontotheology “is no ‘early’ view that is later abandoned” (Allen, 2005: 51), but is rather a common thread that runs throughout his work, all the way from 1927—the year *Being and Time* was published—to 1968’s “Time and Being” (Allen, 2005: 46-52):

The knowledge attained in science is a truth such as epistemology from Plato to Descartes desired, a vision of beings as they are, which under the right methodological conditions turns out to be the way they look. It is not Heidegger’s purpose to prove (against skepticism) that such cognition is possible for us, even less that it is a mistake or confusion to expect knowledge of this caliber. He takes the possibility for granted and thinks he can “explain” it in terms of ontological difference and human existence. (Allen, 2005: 51)

According to later Heidegger, one of the projects of *Dasein* is that it explicitly pursues what Heidegger calls *aletheia*, (translated as “truth” or “revealing”—the sensory perception of something as true) via the process of *poiesis*, or “bringing-forth” of Being: “in the realm of thinking, a painstaking effort to think through still more primally what was primally thought [...]” (Heidegger, 1977b: 22). In this way, technology (along with poetry) is some kind of attempt to render the world clear to us; as in *Being and Time*, the process of “revealing” is one that serves to call forth the object’s Being; viz.: its ontological “equipmentality”. Consider: in *Being and Time*, Heidegger

makes note of the fact that spectacles (assuming they fit well and the person wearing them has a correct prescription) are in fact further away than the objects upon which they help us to focus. That is not to say that the spectacles are *physically* further away—that, after all, would be committing the ontotheological fallacy by reducing it to mere presence-at-hand—but rather they are further away from human concern. The object’s distance from our concerns guarantees the *closeness of its Being*; to be distant is to be close, and readiness-to-hand is the state of tension between these two poles.

Although by the time of the Bremen Lectures and “The Question Concerning Technology” Heidegger is no longer discussing entities with regards to their presence or readiness, he nonetheless retains this conception of ontological distance via the concept of *das Abstandlose*, or “the distanceless” (Harman, 2009: 20). The concept of “distancelessness” is isomorphic to his prior use of presence-at-hand; rather than examining ontological Being via the tension of the close and distant, the world collapses into a “uniform lack of distance” (Heidegger, 1994: 6, via Harman, 2009: 20), where everything enters a state of “standing reserve” (*Bestand*). Technology itself, just like philosophy and science in *Being and Time*, dissolves the world into something without depth or texture—a manipulable, accessible thing that is all surface and no substance. Of course, this is not entirely problematic: by reducing the world to certain sensible qualities, it allows us to make meaningful claims about it; not the least of which being that we are able to conclude that the world retains certain qualities even when we are not directly experiencing it: “Enframing (*Gestell*) means the gathering together of the setting-upon that sets upon man, i.e. challenges him forth, to reveal the actual, in the mode of ordering, as standing reserve. If we give heed to this, then another whole realm for the essence of technology will open itself up to us. It is the realm of revealing, i.e., of truth” (Heidegger, 1977b: 20). After all, Heidegger is no Luddite; in “The Question Concerning Technology”, he notes with approval that a windmill serves as a form of *poiesis*; in harnessing the rhythms of the world, the Being of the world may be revealed to us. However, modern technology—that is, machine-like, calculated, exact—despite also being a revealing, is not a revealing of the same kind: “the revealing that holds sway throughout modern technology does not unfold into a bringing-forth in the sense of *poiesis*. The revealing that is in modern technology is a challenging (*Herausfordern*), which puts to nature the unreasonably demand that it supply energy that can be extracted and stored as such” (Heidegger, 1977b: 14).

Heidegger’s concern is not just that we are capable of Enframing the world and making it a “distanceless” quality (after all, as per *Being and Time*, it seems clear that objects can escape being Enframed via appropriate praxis); it is that certain kinds of technology (just like science and philosophy) render the world in standing reserve to the *exclusion* of readiness-to-hand relations, and thus to Being itself. And so it is with the advent of the Industrial Revolution that *Dasein* becomes subject to its own vast hubris; in “challenging” (*Herausfordern*) the natural order by subverting natural pro-

cesses for our own nefarious ends; by no longer being subject to the whims of the world, we are no longer engaged in a process of *poiesis*. Rather, we may only observe Being through a glass darkly, our vision occluded by our own rapacity and insensitivity:

The hydroelectric plant is set into the current of the Rhine. It sets the Rhine to supplying its hydraulic pressure, which then sets the turbines turning. This turning sets those machines in motion whose thrust sets going the electric current for which the long-distance power station and its network of cables are set up to dispatch electricity. In the context of the interlocking processes pertaining to the orderly disposition of electrical energy, even the Rhine itself appears as something at our command. The hydroelectric plant is not built into the Rhine River as was the old wooden bridge that joined bank with bank for hundreds of years. Rather the river is dammed up into the power plant. What the river is now, namely, a water power supplier, derives from out of the essence of the power station. (Heidegger, 1977b: 16)

We have in a sense *manufactured* the river; we have compromised our capacity to recognise its *aletheia* in some fundamental way; we can no longer recognise the river's essential Being, but instead can only describe it in terms of its utility—Being subsumed within function. Indeed, as Heidegger claims in the Bremen Lectures, this process of Enframing is one of *danger* (Heidegger, 1994: 54). Of course, it would be an error to consider this danger unequivocally negative. After all, as stated above, reducing the phenomenal sphere into distanceless data via technology has certain undeniable benefits. Rather, the point lies with the observation that Heidegger's "technology" is less a body of tools that facilitate certain kinds of action, and more an integral part of our Being itself, with the tools that we use are merely products of that Being. "Technology" is not something that *Dasein* does, but rather is something that *Dasein* is. The danger lies in the fact that this capacity to disqualify or marginalise Being is an inherent facet of our own collective makeup; like the protagonist in any Greek tragedy, technology is our *hamartia*, or fatal flaw. "In the danger of being lies the possibility of a turn (*Kehre*) away from the forgetting of being into the truth of being itself". Our only redemption lies in the fact that we, as the "shepherds of being" are able to be confronted with the "call of distress from being itself" (Harman, 2009: 23) and can thus attempt to reattain our understanding of it.

The first step in reigniting our understanding of Being is to understand that the world is not merely comprised of *objects*—that is to say, objects of *something*—but that these objects may also be understood as *things*. Now, if objects are those sensible entities subsumed within a systematic understanding of the orderliness of the universe, a thing is that which has content and purpose independent of our awareness of it. "Thingness" is contingent upon nearness or readiness-to-hand, for a thing should "thing" in the

sense of “thing” being a verb—in being that which it is, a thing does what it does (namely, it “things”). Accordingly, a thing is not merely a “stockpile of present-at-hand correlates of consciousness” (Harman, 2009: 24), but rather it is an entity that stands independent of the standing reserve.³ According to Heidegger, it is important that we attempt to reclaim our understanding of the inner life of things, even as the inner life withdraws from our desperate grasp. To only permit scientific renditions of the world is to engage in analysis that is willingly and necessarily blinkered, for “science always encounters only that which its type of representation permits in advance as the object that is possible for it” (Harman, 2009: 24). The world is reduced to some kind of garish pastiche of colours and sensations: a form of not-terribly-flattering caricature that has recognisable features but is nonetheless without substance. To live in such a world is not living at all; the world becomes an inert, purely causal entity. Even when damage is done to the world—say, by acts of violence—this is merely a necessary product of the true crime of technology, whereby Being is expunged from our experience of the world. Indeed: “science annihilated the things as things long before the atom bomb exploded. This explosion is only the crudest of all crude confirmations of the annihilation of the thing that transpired long ago: that the thing as thing remains null and void” (Heidegger, 1994: 9, via Harman, 2009: 24). There are no longer any maps for these territories.

3.2 *Industrialising the Revolution*

Already it becomes clear that technology is understood to pose a certain existential threat to human beings; there is something about it that threatens the kinds of beings that we are, even if the concern, as articulated by Heidegger, is slightly inchoate. However, we find in subsequent scholarship, particularly in scholarship of a Marxian disposition, a concretisation of these concerns; an elision between the purported threat to ontological Being and the fear of losing of political agency due to the encroachment of technology on our collective form of life. Accordingly, this section is my attempt to provide a rough guide to this aspect of Heideggerian scholarship: beginning with Herbert Marcuse’s plea in favour of a new kind of political agency via the development of what he calls a “New Technology”. From here, I trace a thread, via Jürgen Habermas and Andrew Feenberg, of how post-Heideggerian political theorists have understood the relationships that exist between technology and political agents.

Herbert Marcuse studied under Heidegger during his formative academic years, having written his *Habilitationsschrift* during the old master’s tenure at Freiburg, completing his *Hegel’s Ontology and Theory of Historicity* in 1932: the year before Heidegger began his explicit affiliation with the Na-

³ Please be aware that I will not be maintaining the Heideggerian distinction between “thing” and “object” throughout the rest of this work.

tional Socialists.⁴ Accordingly, it should be unsurprising that something of Heidegger's astringency remains in the work of Marcuse, particularly with regards to the means by which technology can be understood as partially constituting the human condition, and thence how that constitutive aspect can be leveraged as an agent of political control. His most famous work, *One-Dimensional Man*, is perhaps his best-known articulation of these issues.⁵ Like others broadly associated with the Frankfurt School and its satellite arms, he arrives at a certain conclusion: that contemporary capitalism has seen fit to somehow endanger the freedom and agency of its political constituents, the citizenry. Although in the work of someone like Hannah Arendt this is fear is articulately by claiming that man's life has become reduced to the merely *social*, and is thereby denuded of the capacity for meaningful *action*, but in Marcuse the nature of this criticism has a distinctly Marxian flavour.⁶ For Marcuse's bugbear is consumerism—specifically, consumerism as understood to be an agent of social control.

Marcuse claims that, rather than empowering consumers by offering us more choices with regards to what we consume, consumerism in fact serves to do the opposite; indeed, Marcuse makes the claim that, by “virtue of the way it has organised its technological base, contemporary industrial society tends to be totalitarian” (Marcuse, 1964:3). This is not to say that it is politically totalitarian; he is not arguing in favour of the claim that technologised society must necessarily devolve into a one-party state. Rather, the argument runs in favour of the existence of “a non-terroristic economic-technical coordination which operates through the manipulation of needs of vested interests”, which “precludes the emergence of an effective opposition against the whole” (Marcuse, 1964:3). Although we may speak of living in a free society, Marcuse wonders about the nature of that freedom; though we might say that we have certain positive liberties with regards to economic, political and intellectual freedom, true *negative* liberty eludes us. We require “new modes of realisation”. He writes:

Such new modes can be indicated only in negative terms because they would amount to the negation of the prevailing modes. Thus economic freedom would mean freedom *from* the economy—from being controlled by economic forces and relationships; freedom from the daily struggle for existence, from earning a living. Political freedom would mean liberation of the individuals *from* politics over which they have no effective control. Similarly, intellectual freedom would mean the restoration of individual thought now absorbed by mass communication and

4 Readers of Heidegger have long found his Nazi affiliations fact hard to swallow. In the words of Richard Rorty: “Heidegger’s books will be read for centuries to come, but the smell of smoke from the crematories—the ‘grave in the air’—will linger on their pages” (Rorty, 1998).

5 First published in 1964, though some of his earlier works—most notably “Some Social Implications of Modern Technology” (Marcuse, 2005), first published in 1941—prefigure many of these concerns.

6 For more on Arendt, there are worse places to start than Arendt, 1998 and Arendt, 2000.

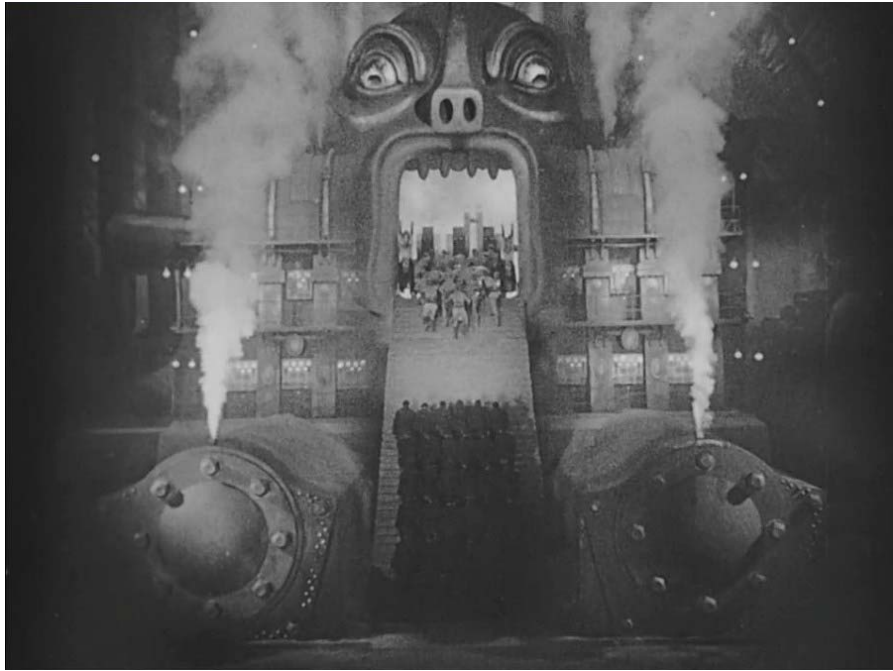


Figure 6: Screenshot from *Metropolis*, 1927

indoctrination, abolition of “public opinion” together with its makers. The unrealistic sound of these propositions is indicative, not of their utopian character, but of the strength of the forces which prevent their realisation. (Marcuse, 1964: 4)

For Marcuse, technology is fundamentally complicit in this process of disempowerment, of denuding Man of his political (that is to say, human) character. As Marcuse argues in “Some Social Implications of Modern Technology”, the rise of individualistic rationality—that is, the concept of Man as rationally pursuing his own economic interests⁷—actually sowed the seeds for its own destruction. As “competition” became the byword of economic reform, increased industrialisation and mechanisation forced weaker, less efficient, less mechanised participants to become subsumed within the “dominion of the giant enterprises of machine industry”, thereby abolishing the “free economic subject” (Marcuse, 2005: 141). Technology becomes a method of discovering the putatively most excellent means of meeting human needs, and is thus to be considered (by an uncritical political constituent) Reason itself.

Let us be clear: this is not a criticism of technology as a means of control in the same way that *Nineteen Eighty-Four* is a criticism of technology as a means of control, nor is it the kind of subtle panoptic oppression that one finds in Foucault’s *Discipline and Punish*. Rather, the control to which Marcuse refers is even more insidious—a form of technologically premised control which excludes the possibility of criticism as something “neurotic and impotent”: “[...] in the contemporary period, the technological controls

⁷ Cf.: Adam Smith in *The Wealth of Nations*.

appear to be the very embodiment of Reason for the benefit of all social groups and interests—to such an extent that all contradiction seems irrational and all counteraction impossible” (Marcuse, 1964:9). Human beings in technologised capitalism are “motivated, guided and measured” by external standards, whilst efficiency and worth become subject to an economic calculus wherein they are judged according to a person’s “proper reaction to the objective requirements of the apparatus” (Marcuse, 2005:142). Thus the human subject becomes merely matter-of-fact: a constituent cog working in the belly of a vast, belching, industrial machine. Both true political agency and true phenomenological anchoring elude us; being deterministic constituent parts, human action only matters insofar as it participates in the grander capitalistic apparatus of production and consumption, with the inevitable result that our conception of ourselves is rudely reduced to that which we consume:

We are again confronted with one of the most vexing aspects of advanced industrial civilisation: the rational character of its irrationality. Its productivity and efficiency, its capacity to increase and spread comforts, to turn waste into need, and destruction into construction, the extent to which this civilisation transforms the object world into an extension of man’s mind and body makes the very notion of alienation questionable. The people recognise themselves in their commodities; they find their soul in their automobile, hi-fi set, split-level home, kitchen equipment. The very mechanism which ties the individual to his society has changed, and social control is anchored in the new needs which it has produced. (Marcuse, 1964: 9)

Consequently, Marcuse argues for the possibility that technologised society invades and whittles down our capacity for engaging in introjection, the process by which (according to psychoanalysts) subjects obtain, internalise and replicate certain behaviours or attributes of the surrounding world. The technologised subject is instead claimed by mass production and mass distribution, leaving a series of mechanised internal processes in the place of true introjection; like an animal wandering dumbly through the world, technologised man undergoes a kind of mimesis: “an immediate identification of the individual with *his* society and, through it, with the society as a whole” (Marcuse, 1964: 10). This is the dark power of Reason: as industrial capitalism adopts the mantle of objective Goodness, there is no longer fertile soil in which the seeds of opposition can take root. Indeed, constituent consumers have no longer even retained the vocabulary of opposition; in a rather Orwellian twist, we are now no longer able to recognise or articulate viable alternatives: “The efficiency of the system blunts the individuals’ recognition that it contains no facts which do not communicate the repressive power of the whole” (Marcuse, 1964: 11).

The necessary product of these processes is the “one-dimensional man” of Marcuse’s book of the same name. As the ideologies of late capitalism become absorbed into lived experience, lived experience itself becomes

denuded and flattened out; the danger of our collective tendency towards Heideggerian ontotheology—towards rendering the world *das Abstandlose*. Technology, rather than being a mere tool of control, is instead an active constituent of forms of control. Marcuse speaks of technological rationality being of the same kind of process as operationalism in the physical sciences and behaviourism in the social sciences: as a kind of *total empiricism* wherein concepts find complete identity with their corresponding set of operations. When Marcuse approvingly quotes P. W. Bridgeman’s analysis of the concept of length, he finds an early articulation of the conceptual concerns inherent in this total empiricism; given that we “shall no longer permit ourselves to use as tools in our thinking concepts of which we cannot give an adequate account in terms of operations” (Marcuse, 1964: 13), the one-dimensionality of our collective experience must soon follow. The technological rationality of total empiricism allows for the elimination of concepts (such as “mind”) for which there is insufficient account. More dangerously, by Marcuse’s account, total empiricism also serves to “coordinate ideas and goals with those exacted by the prevailing system, to enclose them in the system, and to repel those which are irreconcilable with the system” (Marcuse, 1964: 13-14). This even remains true for those practices which we might be inclined to think about as providing a challenge to materialistic technological rationality. Instead, even “spiritual, metaphysical and bohemian” occupations are able to be reconciled with the technological apparatus, being little more than the “ceremonial part of practical behaviourism, its harmless negation, and are quickly digested by the status quo as part of its healthy diet” (Marcuse, 1964: 14).⁸

Escape from this system seems impossible, as all forms of protest are inherently self-negating; as with other Frankfurt School criticisms of late capitalism, there is the grim acknowledgement that there exists no entity with sufficient agency to exceed these boundary conditions: “There are innumerable blueprints for utopian futures that are, in varying degrees, egalitarian, cosmopolitan, ecologically sustainable, and locally responsive, but no solution to the most intractable problem of all: who is going to make it happen?” (Bull, 2005: 19). However, Marcuse sidesteps this concern by claiming that Marxist teleology will necessarily engender an internal crisis of faith for capitalism’s technological rationality and thus give us the opportunity to re-vocalise via the development and application of certain technological processes. Although he does not use the term explicitly, Marcuse seemingly argues in favour of a kind of post-scarcity society wherein

⁸ Giorgio Agamben, in his essay “In Praise of Profanations” makes a similar point, arguing that “secularisation” does little to subvert the prevailing state of affairs: “Secularization is a form of repression. It leaves intact the forces it deals with by simply moving them from one place to another. Thus the political secularization of theological concepts (the transcendence of God as a paradigm of sovereign power) does nothing but displace the heavenly monarchy onto an earthly monarchy, leaving its power intact. [...] Profanation, however, neutralizes what it profanes. Once profaned, that which was unavailable and separate loses its aura and is returned to use. Both are political operations: the first guarantees the exercise of power by carrying it back to a sacred model; the second deactivates the apparatuses of power and returns to common use the spaces that power had seized” (Agamben, 2007: 77).

“material production [...] becomes automated to the extent that all vital needs can be satisfied while necessary labor time is reduced to marginal time”. Once this point is reached, technical progress is no longer restricted to meeting its own internal requirements but instead would “transcend the realm of necessity [...]”; technology would become subject to the free play of faculties in the struggle for the pacification of nature and society”. It is this state of Marxist eschatology—what Marcuse dubs the “pacification of existence”—that is the desirable outcome of the process of Western late capitalism (Marcuse, 1964: 16). Under this new system, the solutions of technoscience would become “open to objectives which go beyond utility” and instead develop a New Technology to provide solutions to the “art of living” (Marcuse, 1964: 232).

Unfortunately, the self-negating properties of technological rationality mean that concepts such as Freedom and Reason are necessarily prejudged by virtue of being capable of cleanly integrating with the techno-political system (“the mature industrial society closes itself against the alternative”) so although this internal threat to capitalism will necessarily eventuate, there is no guarantee that this threat will succeed against the status quo (Marcuse, 1964: 17). Although short of a call to arms, Marcuse does ask us to remain vigilant. It befits us to pursue alternatives, lest we find ourselves golems trapped in an endless cycle of production and consumption from which there is no exit: “Technological rationality reveals its political character [...], creating a truly totalitarian universe in which society and nature, mind and body are kept in a state of permanent mobilisation for the defence of this universe” (Marcuse, 1964: 18).

Habermas begins his essay “Technology and Science as Ideology” with a wry dedication: “For Herbert Marcuse on his seventieth birthday, July 19, 1968” (Habermas, 1987: 81). A dedication, yes—Marcuse had an enormous influence upon the intellectual development of the young Habermas, having been taught by Marcuse’s Frankfurt School colleagues Theodor Adorno and Max Horkheimer—but wry indeed, as it proves the opening move in an essay intended to cast doubt upon the validity of Marcuse’s entire critique of the prevailing social order, as well as disputing Marcuse’s arguments in favour of the mere possibility of a New Technology. Citing Arnold Gehlen as an inspiration, Habermas argues that technological progress unfolds in a fashion that is both bodily-oriented and broadly teleological. Bodily-oriented in that Habermas believes that technological progress is the development of technics by which we are able to objectify senses or other bodily constituents and subsequently amplify the effects of those constituents and/or redress perceived faults in their normative function: levers for hands, spectacles for eyes, calculators for brains. Broadly teleological in that the embodied orientation of technological progress demands that this process of bodily objectification trundle along a trajectory given by the morphological composition of the human form, allowing no deviation; what is occurring

must necessarily occur as assured by the crude diktats of our shared physiology:

If we comprehend the behavioral system of action regulated by its own results as the conjunction of rational decision and instrumental action, then we can reconstruct the history of technology from the point of view of the step-by-step objectivation of the elements of that very system. In any case technological development lends itself to being interpreted as though the human species had taken the elementary components of the behavioral system of purposive-rational action, which is primarily rooted in the human organism, and projected them one after another onto the plane of technical instruments, thereby unburdening itself of the corresponding functions. At first the functions of the motor apparatus (hands and legs) were augmented and replaced, followed by energy production (of the human body), the functions of the sensory apparatus (eyes, ears, and skin), and finally by the functions of the governing center (the brain). (Habermas, 1987: 87)

Trapped as we are in bodies with our specific morphological features—two fully prehensile hands with thumbs, upright posture, two legs, capped off by a cranium containing a brain and a number of sensory organs—our technics are necessarily and inescapably informed by these features. Something intended to be a chair adopts a certain form based upon brute bodily requirements that are not contingent upon language or cultural variability. Whether one is in 21st century Sydney, Australia, or a denizen of the Indus Valley Civilisation circa 3000 BCE, things that serve the purpose of chairs will be recognised as *objects upon which to sit*. We write today of *ergonomics*—a word first used by Wojciech Jastrzębowski in 1857—to describe something like the *science of work*, analysing the best means by which human agents may be integrated into given systems. It is something very much like “ergonomics” to which Habermas is referring: human agents require that objects have certain properties and of a certain scale in order to use them effectively, and this necessarily dictates the limits of the objects themselves. Were our forms different—say, in the event that we had the morphology of elephants—our ergonomics would be entirely different in order to accommodate for a vastly different physiology: prehensile trunk, large body, weak eyesight, quadrupedal locomotion. These facts are inalienable.

Marcuse, in *An Essay on Liberation* argues that the New Technology of which he writes would allow us to shake off the shackles that restrain us, and indulge in an entirely new form of life:

The liberated consciousness would promote the development of a science and technology free to discover and realise the possibilities of things and men in the protection and gratification of life, playing with the potentialities of form and matter for the attainment of this goal. Technique would then become

art, and art would tend to form reality: the opposition between imagination and reason, higher and lower faculties, poetic and scientific thought, would be invalidated. Emergence of a new Reality Principle: under which a new sensibility and a desublimated scientific intelligence would combine in the creation of an *aesthetic ethos*. (Marcuse, 1969: 24)

Habermas rejects this claim, arguing instead that the fact of our embodied existence renders even conceiving of a New Technology entirely impossible, with technological developments following an internal logic corresponding to a goal-oriented—what Habermas calls “purposive-rational”—structure of action that becomes necessarily “regulated by its own results, which is in fact the structure of work”. Habermas argues that, realising this, it becomes impossible to conceive of a means by which we could renounce our technology in favour of one that substantively differs; we are without the capacity to render a New Technology (Habermas, 1987: 87). Insofar as Habermas is concerned, Marcuse’s claims that a New Science would be necessarily premised upon a renouncement of our goal of mastery of nature, instead seeking out a “fraternal rather than an exploited nature” wherein we can ascribe subjectivity to those things that constitute nature and thereby attempt to communicate with her (Habermas, 1987: 88). However, Habermas believes that this New Science is insufficient to the task, for “the achievements of technology, which are indispensable as such, could surely not be substituted for by an awakened nature”. Instead, for nature to become our partner rather than merely an object of our exploitation, we would be required to utilise an “alternative structure of action: to symbolic interaction in distinction to purposive-rational action” (Habermas, 1987: 89)—a structure of action that Habermas argues is impossible for science: “The idea of a New Science will not stand up to logical scrutiny any more than that of a New Technology, if indeed science is to retain the meaning of modern science inherently oriented to possible technical control. For this function, as for scientific-technical progress in general, there is no more ‘humane’ substitute” (Habermas, 1987: 89).

The question of *why* Habermas believes this to be the case is a rather more complex question, and has its origins in an historical debate: that of Marx’s conflation of the categories of labour and speech by “assimilating the self-reflective basis of speech and social philosophy to a crude materialist model of laboring” (Agger, 1976: 178). As Ben Agger writes, Habermas criticises this collapse of categories for he wishes to preserve the “hidden unity” of “knowledge” and “interest” that rational self-reflection is capable of revealing. If, as Marx claims, speech and self-reflection are forms of labour, then not only does no such unity exist, but science itself (understood as a conceptual entity) becomes incapable of reflecting meaningfully upon its own praxes, having been reduced to a mere form of production. Meanwhile, Marcuse accepts this Marxian welding-together of self-reflection and labor and uses it to underpin his entire program, arguing from the premise that science and technology, rather than being mere “abstract social forces”, are

instead each forms of the life-instinct, and thus forms of labor, and so can thus be transformed by virtue of altering the nature of labour itself (Agger, 1976: 178).

This point of difference between Marcuse and Habermas is extremely important, for it speaks directly to and of the post-Marxist revolutionary spirit. If reflection and speech are not labour, as Habermas claims, then science—and by corollary, technology—are not labour, and thus are not subject to Marxist historical ructions. As he argues in *Knowledge and Human Interests*, the idea that the “resurrection of nature” can be conceived within materialism is a product of a kind of Marxist “heritage of mysticism”. He writes that “[nature] does not conform to the categories under which the subject apprehends it in the unresisting way in which a subject can conform to the understanding of another subject on the basis of reciprocal recognition under categories that are binding on both of them” (Habermas, 1971: 32-33). Given that fact it is nonsensical to think that nature adheres to our categories in the same way that we might make demands of another human being, categorical claims such as scientific claims cannot be correctly considered to be materialist (viz.: to be subsumed within the category of labour). Rather, science and technology are to be considered forms of *speech*, and thus categorically distinct from labour. Furthermore, given that the relationship between man and nature is accordingly premised upon our capacity for speech, it is foolish to think that this relationship can be revolutionised by changing the nature of labour: “Habermas feels that there will never be a ‘new’ science or technology, only the same old apparatuses *used* differently by enlightened technocrats and ‘rational’ interlocutors” (Agger, 1976: 178). Understandably, this has grave implications for Marcuse’s theory: in arguing that the Marxist conflation of speech and labour is the product of a mere category error, Habermas elegantly negates (and eviscerates) the possibility of either a Marcusean New Science or New Technology by claiming that science and technology are categorically distinct from labouring modes of production.

This thesis has other ramifications, also. Later in “Technology as Ideology”, Habermas makes the claim that the transition from neoclassical political economy to the Keynesian welfare state saw ideology neatly removed from political discourse, with the “ideology of free exchange” replaced by a “substitute program” (Habermas, 1987: 102). Habermas sees the transition to Keynesianism as a fundamentally technocratic shift oriented “not to the social results of the institution of the market but to those of government action designed to compensate for the dysfunctions of free exchange”; the good and proper locus of political attention becomes the body itself, with the government offering a guaranteed minimum level of welfare and guarding against risks to growth (Habermas, 1987: 102). The act of *govern-ing* becomes denuded of its inherent political character, but instead takes on a character which is distinctly negative. He writes: “For [government] is oriented toward the elimination of dysfunctions and the avoidance of risks that threaten the system: not, in other words, toward the *realization*

of practical goals but toward the solution of technical problems” (Habermas, 1987: 102-103). What were once political problems become mere technical problems; although the title of Habermas’ essay refers to “Technology as Ideology”, it is ideology only insofar as technology has supplanted it; internal tensions within polities are relegated to being mere technical problems, and as a result the political sphere becomes infected with “technological rationality” (Fisher, 2007). This is in sharp distinction with Marcuse, for whom technology is *actively* ideological; for Habermas, technology only *instrumentally* impinges upon our lifeworlds. As it is not to be considered within the purview of labour, the content and development of technology is of little philosophical interest: insofar as Habermas is concerned, these are questions best left to engineers and other experts (Achterhuis, 2001: 72).

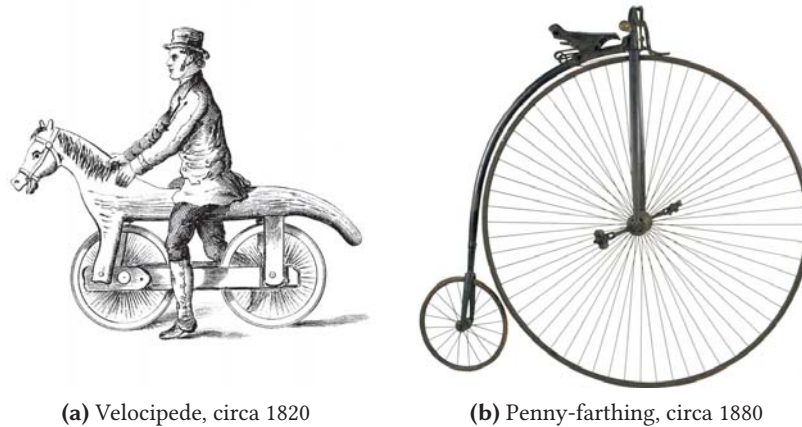
It is Habermas’ conclusion that technology only instrumentally impinges upon our lifeworlds that is of interest to philosopher of technology Andrew Feenberg. Although Feenberg admits that Habermas won his debate with Marcuse (Feenberg, 1996: 49), he is careful to note that the mere fact of Habermas’ victory is not sufficient cause for us to unhesitatingly endorse his position, on the basis that a purely instrumental picture of technology is necessarily incomplete.

Borrowing a distinction from Albert Borgmann (Borgmann, 1984: 7-12), a figure with which we will engage shortly, Feenberg in *Critical Theory of Technology* distinguishes between two broad camps with regards to philosophical treatments of technology: *instrumental* theories of technology and *substantive* theories of technology. Instrumental theories are those models that presuppose that technological devices are fundamentally inert; neutral to social and political choices. Although not given much credence in contemporary philosophy of technology (Achterhuis, 2001: 68), these intuitions continue to substantively inform public debate on the ethics of certain technologies. The common catch-cry of “guns don’t kill people, people kill people” is the *sine qua non* of these kinds of intuitions, endorsing a model of human action whereby technological artefacts do not bear relevantly upon the realisation of certain intended actions. Meanwhile, substantive theories are those such as we are discussing in this chapter; beginning with the work of Heidegger and French philosopher Jacques Ellul, substantive theories have sought to question purely instrumental definitions of technology by casting suspicion upon their purported cultural and social inertness and thereby posit the reduction of human agency to being reduced to mere cogs within a vast, dehumanising technocratic apparatus. Feenberg sees reason to doubt both of these stories; although he acknowledges that both have a part to play in analyses of technological systems, he considers both symptomatic of a boolean approach, reflecting an innocent “take it or leave it” mentality (Achterhuis, 2001: 69). Feenberg hopes to reinvigorate what is otherwise an unhelpfully obstructed debate by opening up a middle path between the two: a path that can not only successfully account for the con-

tent of technology, but also provide an opportunity to address the possibility of an “alternative” technology.

It is both Habermas’ technological determinism and his instrumental assessment that proves problematic for Feenberg. As we have noted, Habermas considers even discussing the possibility of New Technology (to borrow Marcuse’s term) an exercise in a kind of science-fictional, indulgent, mystical Marxism; an inane utopianism premised upon a category error and pursued with pointless revolutionary zeal. For Habermas, technology is a mute, mechanistic articulation that unfolds in a fashion determined by the human body, with the only real danger it poses is that it may serve to occlude or otherwise compromise our capacity for public speech should it be applied inappropriately: “Habermas’s approach implies that in its proper sphere technology is neutral, but outside that sphere it causes the various social pathologies that are the chief problems of modern societies”. That having been said, Feenberg continues with a strike at Habermas’ teleological instrumentalism: “Although his position too is powerfully stated, the idea that technology is neutral, even with Habermas’s qualifications, is reminiscent of the naïve instrumentalism so effectively laid to rest by constructivism” (Feenberg, 1996: 46-47). Following the cues of sociologists Trevor Pinch and Wiebe Bijker, Feenberg in *Democratic Rationalisation* claims that even something as banal as the early history of the bicycle is evidence that technology does not evolve teleologically. To this end, he posits that what we now consider a bicycle—a self-evident technological black box—is in fact the product of two entirely different devices: a utilitarian mode of transport with two equal-sized wheels known as a “draisine” or a “velocipede”; and a sportsman’s racing vehicle, with the front wheel substantially larger than the other, commonly referred to as a “penny-farthing”. Feenberg argues that, rather than being two instances of the same technology, they are in fact different technologies with certain shared elements, as a) they met entirely different social needs and b) neither form was a stage in the other’s development. Indeed, he argues that a deterministic reading of the development of the bicycle Whiggishly (and inaccurately) projects “the abstract technical logic of the finished object back into the past as a cause of development” (Feenberg, 2003b: 654-655).

However, perhaps Feenberg’s most damning indictment of the Habermasian view can be found in his analysis of the board game Go, in “Alternative Modernity? Playing the Japanese Game of the Culture”. Analysing games such as Go provides a unique insight into questions of technological determinism and neutrality, for unlike most forms of technology, games are examples of devices with built-in boundary conditions regarding the way in which play is conducted. By outlining explicit rules and various quantitative methods, board games are arenas in which “ambiguity has been removed from the field of play”, as well as enforcing “the artificial equalisation of the players who, in everyday life, are sure to be subtly differentiated in ways the game ignores” (Feenberg, 1995: 112-113). These unique properties mean that the game itself can be analysed separately from the environment



(a) Velocipede, circa 1820

(b) Penny-farthing, circa 1880

Figure 7: Early bicycles: two distinct devices

in which it is being played; whether or not the Go board is on a cruise ship, a sub-arctic island or a lava field will not bear relevantly upon the means by which the game is played. Purportedly “abstracted from all cultural and symbolic differences”, players and the rules they observe are, in some relevant respect, strongly resemble those Habermasian “characteristics of modern science and technological rationality” (Achterhuis, 2001: 82 and Feenberg, 1995: 113).

Purported indeed, for even the game of Go is subject to social and cultural pressures. In Yasunari Kawabata’s classic novel *The Master of Go*, Kawabata describes an historic match between the imminently retiring Master of Go, Shusai, and his much younger competitor, Otaké. Otaké is an example of what Kawabata refers to as the “modern sort”: young, upcoming Go players who do not share the aesthetic sensibilities of the older generation, who have no interest in bringing about “a work of art on the Go board”, but are instead entirely motivated by winning or losing, much to the dismay of the old masters (Achterhuis, 2001: 84-85). Indeed, when Otaké makes an unorthodox (though legal) move, the Master feels obliged to speak out, complaining that “it was like smearing ink over a picture we had painted” (Kawabata, 2006: 187). Kawabata describes this hostility and incommunicability between modern sorts and the older players in even more explicit terms:

From the veranda outside the players’ room, which was ruled by a sort of diabolic tension, I glanced out into the garden, beaten down by the powerful summer sun, and saw a girl of the modern sort insouciantly feeding the carp. I felt as if I were looking at some freak. I could scarcely believe that we belonged in the same world. (Kawabata, 2006: 29)

Kawabata’s revulsion suggests that there is more going on here than Habermas would have us believe. Despite his arguments in “Technology as Ideology”, even games such as Go continue to evolve and develop in

the face of new cultural contexts, despite the fact that the rules of the game have remained unchanged since spreading from China into Japan and Korea in the 7th century CE. Contra Habermas' claims to the effect that technology is inert and fundamentally non-reactive with the social sphere—arguing that technological progress is mutely teleological—Feenberg's analysis goes to show that even thousand-year-old board games with ossified rulesets are subject to social, cultural and historical contingencies; were this not the case, there could be no possible justification for Shusai's dismay or Kawataba's disgust. He argues that Kawataba's novel is in fact a savage criticism of the "pretensions of false universality", instead arguing for a kind of technological pluralism wherein alternative types of rationality—each of which are "candidate[s] for modernity"—vie for supremacy (Feenberg, 1995: 134). In short, despite Habermas' claims to the contrary, Feenberg concludes from this discussion that alternative versions of modernity—such as Marcuse's New Technology—are indeed possible (Achterhuis, 2001: 86). In spite of Habermas' pessimism, we need not be content with our lot.

Despite the fact that Habermas can be faulted on these points, Feenberg acknowledges that Habermas' criticism of Marcuse's romantic metaphysics nonetheless continues to stand, thus preventing a return to Marcuse's original model wherein speech is subsumed as part of labour. Appealing to the possibility of a third path, he asks: "Couldn't one work toward [...] a transformation gradually, using existing technical principles but reforming them, modifying them, applying them somewhat differently?" (Feenberg, 1996: 55). He salvages from Marcuse (and by extension Heidegger) the acknowledgment that technology can, by virtue of its substantive properties, prove problematic for not only our political structures, but also the composition of the human being itself, whilst also attempting to provide a concrete alternative definition of technology that is anti-essentialist and non-teleological (Feenberg, 1999: 1). In response to this problem, Feenberg differentiates between and then synthesises what he considers two different bodies of work in the field of technology studies into a single *instrumentalisation theory*.

The first level, that of *primary* instrumentalisation, is the body of scholarship that retains certain Heideggerian assumptions about technology with regards to its essential properties; it would not be unfair to say that each of the theorists we have so far discussed (Heidegger, Borgmann, Marcuse and Habermas) belong in this camp. Meanwhile, the second level, that of *secondary* instrumentalisation is comprised of the scholarship produced by empirically-oriented sociological studies of technology, particularly the work of Bruno Latour. Primary instrumentalisation allows us to understand our technology as a kind of entity that decontextualises nature, replacing the natural rhythms of the given world with brutishly mechanistic processes that serve to *automate* certain actions. Due to having replaced natural rhythms, and thus the possibility of dynamical feedback, the world becomes unnoticed by our technology: "The hunter experiences a slight pressure on his shoulder as the pullet from his gun strikes the rabbit; the driver hears a faint rustling in the wind as he hurtles a ton of steel down the

highway” (Feenberg, 1999: 204). The world we occupy is becoming increasingly technologised—removed from nature’s textures and towards the featureless Heideggerian *Abstandlose*—and as the inhabitants of this featureless world, we find our own actions dispassionately dictated by the needs and necessities of this totalising and denatured system. However, we find the possibility for alternative modernities by invoking secondary instrumentation; although Feenberg does not dispute the findings of primary instrumentalisation, secondary instrumentation grants us the ability to re-appropriate and systematise objects by introducing them to what Latour in *We Have Never Been Modern* calls a “parliament of things” (Latour, 1991: 142-145): just as a needle can do nothing without the presence of thread, the vast majority of our objects only make sense in conjunction with other objects. Furthermore, this process of re-appropriation engenders the possibility of using these objects in *hitherto unintended ways*; the presumed passivity of the subject in primary instrumentalisation is rejected in favour of the acknowledgement of our *collective agency*.

What human beings are and will become is decided in the shape of our tools no less than in the action of statesmen and political movements. The design of technology is thus an ontological decision fraught with political consequences. The exclusion of the vast majority from participation in this decision is profoundly undemocratic. (Feenberg, 2002: 3)

Though it is true that Feenberg acknowledges that technology presents certain existential risks to democratic political systems, echoing Marcuse, it is equally true that Feenberg argues that technology, by virtue of being co-opted into unintended use per secondary instrumentation, can lead us safely out of this political and existential minefield. To use one of Feenberg’s examples: in 1982, the French government began a nation-wide rollout of a service known as *Minitel*—terminals that provided telephone subscribers access to various networked databases, allowing clients to check the phone directory, book train tickets or engage in mail-order retail. Despite the fact that the service was provided as an informational adjunct to a home phone service, the service provider (Poste, Téléphone et Télécommunications) did not expect consumers would begin using it for less wholesome purposes: anonymous online chatting, organising drug deals and swapping text-based erotica (Feenberg, 2003b: 657). As Hans Achterhuis notes, it was long ago predicted that the widespread adoption of the computer would lead to the development of an “information society”; no one, least of all *Minitel’s* engineers, expected online networks to become a means of communication (Achterhuis, 2001: 80).

By Feenberg’s analysis, technology *always* incorporates social values, contra Habermas’ claims. Were this not the case, there would have been no imperative towards abolishing slavery in the United Kingdom and Europe, nor would the factory reform movement of the 1800s in the United Kingdom have proved successful. According to the Habermasian view, the abolition

of slavery and child labour would only have occurred in the instance that modes of production became sufficiently efficient as to render slavery and child labour redundant. However, the historical record indicates that this is not in fact the case, the “violated imperatives of technology” did not come back to haunt them; although it is true that current forms of production are far more efficient than historical forms of production, those industrial processes which were to become the current forms were only developed *after* those key pieces of legislation were ratified (Feenberg, 2003b: 655). In these cases, “efficiency” was not the catch-cry that catalysed technological change; rather, it was “social justice” that led the charge. Feenberg’s scholarship serves to demonstrate that these apparent dilemmas of technology, rather than being intractable, are only problematic because they incompletely take into account the efficacy of collective ethical and existential agency.

3.3 *The World of Our Making*

Leaving behind our discussion of the uncertain bearing that technology has upon political agency, this section concerns technological relations—that is, the means by which we interface with both our technology and the world. Rather than providing an historical account, as in the last section, here I will explore two opposing views: the first a rather pessimistic position, developed by Albert Borgmann, who endorses a theory of technology that is quite explicitly premised upon those Heideggerian tensions that we discussed in CHAPTER 3.1; the second a value-neutral examination of these concerns by Don Ihde, who attempts to salvage Heideggerian philosophy of technology by introducing aspects of Merleau-Pontyan phenomenology to the body of scholarship. We will examine each of these in turn.

Happily buying into the Heideggerian distinction between *thing* and *object*, Borgmann introduces what he calls the *device paradigm*—a description of the undesirable but inevitable state of affairs to which we inhabitants of technologised society are invariably subject. If we recall the distinction between “thing” and “object” from our précis of Heidegger earlier, we remember that “objects” are those entities that are merely objects *of* our consciousness, blandly inhabiting the standing reserve. Meanwhile, “things” are those entities that maintain an existence beyond the standing reserve; unlike objects, they are acting in accordance with their Being by *doing what they do*—leading inevitably to awkward constructions like “the thing *things*”. Maintaining this Heideggerian distinction, Borgmann instead draws a parallel between “things” (as understood by Heidegger), and “devices”, the aggregate of which results in the afore-mentioned “device paradigm”: “The defining development of modern technology, then, is the rise of the device paradigm, the distinctive conjunction of an easily available commodity and a sophisticated and impenetrable machinery” (Borgmann, 2000: 420). Just as treating entities in the world as Heideggerian objects denudes them of Be-

ing, so too do devices (broadly understood as “technology”) unmoor us from things (Tijmes, 2001: 12), as devices are artefacts that have been developed to deliver a *product*.

Borgmann, in *Technology and the Character of Contemporary Life*, asks us to consider a stereo player. Now, the purpose of a stereo player is “well understood”, as Borgmann writes: it is to “provide music”. In this capacity it is predated by a number of other artefacts with similar purposes: brass bands, punk acts and full chamber orchestras all fulfil the same basic role. It is true, he notes, that a group of his friends might well band together and decide to provide live music accompaniment for his birthday party: in that particular case, the role of stereo player and live band do indeed serve the same purpose. However, such ready reductionism occludes the truth of the issue: that the stereo player allows the owner of the device to listen to music whenever he or she feels and, moreover, is not restricted by the talents, equipment or known repertoire of musicians, nor by the available infrastructure or resources of the host. Borgmann explains: “A stereo set [...] secures music not just on a festive day but at any time, and not just competent flute and violin music but music produced by instruments of any kind or any number and at whatever level of quality” (Borgmann, 1984: 3-4). Rather than being forced to endure the ambient migraine buzz of your neighbour’s noise rock collective, you can instead choose to indulge in an original recording of Rachmaninoff’s “Prelude in C# minor, Op. 3, No. 2”, Tom Waits’ lusty roar in “Clap Hands”, or the blues-jazz sensuality of Morphine’s “French Fries with Pepper”.

However, in empowering consumers, the stereo also serves to conceal the process by which music is made. When you observe a trained bluesman plucking at a tuned steel-body resonator guitar, there is something in the playing that allows you to conceive of the method by which sound is produced: the vibration of strings, the amplifying qualities of the resonating chamber and the material imposition of the steel all lend themselves to the bright, jangling waver of the notes rendered. The stereo, on the other hand, allows for none of this feedback; they “do not bespeak [...] what kind of music they contain”, just as speakers have “no visible affinity” to the musical output, beyond perhaps the dull pulse of the speaker driver (Borgmann, 1984: 4). Further developments in multimedia technology have only exacerbated this process which was already well underway when Borgmann wrote of it in 1984. With the prevalence of digital music and portable music players such as iPods, one need not even be tied to a location in order to listen to music; the process has been abstracted to the point where *place* no longer relevantly bears upon the experience of listening. This is what Borgmann means when he says that devices—modern technology—are all about delivering a product. In the case of the stereo—indeed, the MP3 player—the focus is upon delivering the music, whilst the device itself *withdraws from view*. The machinery by which sound is produced becomes hidden, invisible, detached from the form of production itself—and it is this general trend that defines his device paradigm.

Borgmann hesitates to render an unequivocally negative judgement of this state of affairs. Unlike Heidegger, Borgmann accepts that the device paradigm may even have positive effects: without it, we would not have ready access to clean drinking water from our spigots, nor would we have access to the same breadth of affordable, sanitary and functional food and vestments: “Goods that are available to us enrich our lives and, if they are technologically available, they do so without imposing burdens on us. Something is available in this sense if it has been rendered instantaneous, ubiquitous, safe, and easy” (Borgmann, 1984: 41). That said, however positive these products of the device paradigm are, Borgmann is nonetheless concerned with the effect this has on our understanding of the hidden nature of technological devices. Although we may have access to the clean drinking water from our spigots, we are not cognisant of the byzantine network of plumbing that lies just beneath the bricks or plasterboard, let alone the dams or desalination plants in which the water is ultimately reclaimed from the natural world. We may be warmed by the central heating in our office blocks, disburdened of other elements (the trouble of finding fuel, constructing a stove, stoking the fire) and making “no demands on our skill, strength, or attention”, the devices responsible for these products exhibit therefore “a tendency to become concealed or to shrink” (Borgmann, 1984: 42). Invisible and ubiquitous, these devices are transformed into black boxes—and it is to our partial detriment that this is the case.

The problem prosed by technology is not one that involves the loss of Being, as Heidegger would argue, but is more in line with the criticisms of Marcuse and his inheritors. Like many of those influenced by the Frankfurt School, Borgmann argues that the primary danger that technology poses is to democratic institutions because of the *objectifying* (in the Heideggerian sense) tendencies of the device paradigm. However, there is an unavoidable tension at the heart of Borgmann’s analysis: in addition to claiming that technology endangers democratic processes and dispositions, he also acknowledges that contemporary democracy would be impossible without it: “[democracy] can be realized jointly only according to the pattern of technology” (Borgmann, 1984: 86). The putative ends of a democracy—the abolition of concrete inequalities—are best served by technology, for it is in increased production that one finds the most efficient answer to these concerns. However, in making this realisation and acting accordingly, a subtle shift takes place. As the insightful Borgmann commentator Pieter Tijmes writes: “[although] technology is conceived instrumentally, it makes the good life *equal to consumerism*” (Tijmes, 2001: 19, emphasis mine).

Borgmann notes that our choices concerning technology cannot be revoked; like the cyborg in Donna Haraway’s “Cyborg Manifesto”, we would not recognize the Garden of Eden; we are not made of mud and cannot dream of returning to dust (Haraway, 1991: 151). Any decision that we might want to render about the nature of *eudaimonia* has been made, albeit implicitly, once we begin to participate in technologised society. We speak of technology as a means by which consumers are afforded additional

choices: choice between films, fast food restaurants, mid-range Japanese cars. However, echoing Marcuse, this choice is *false*, without substance. Although you might be afforded the choice between Kentucky Fried Chicken and McDonalds, at no point are you granted the choice to not participate in this technologised way of life, because such a decision is *prima facie* excluded on the basis of being politically suspect: “[A] decision against technology or, more accurately, against technologically specified democracy is one against freedom simply and for prejudice, paternalism or totalitarianism” (Borgmann, 1984: 103). As in Marcuse, we are without the vocabulary to beg out of the system, or even to criticise it internally. Instead, technology provides “the inescapable horizon of our existence” (Tijmes, 2001: 20); not only are we unable to render any meaningful criticism, but the instrumental properties of technology (mirroring Habermas) subsume all questions of the good life into a totalising technocratic calculus (mirroring Marcuse). Tijmes summarises this issue nicely:

The political discussion always comes down to a matter of money or its distribution: political goals are discussed in market terms. However deeply they purport to cut, proposals for greater responsibility, greater technical efficiency, and more citizen participation leave the basic structure of technology untouched. These reform efforts may arise from a dissatisfaction with technology but, however strong, are doomed to fail because they remain on the side of technology, and are blind to its idiosyncrasies. (Tijmes, 2001: 20)

At this point, one could forgive readers for thinking Borgmann a mere facsimile of Marcuse, minus the trenchant Marxism and with the addition of some nuance and novel nomenclature. However, what sets Borgmann apart from his predecessors is that his specific diagnosis presents the possibility of a substantive response. For one must consider the fact that Borgmann’s concern regarding the dangerous political consequences for democracy are premised upon a fundamental observation: as the machinery surrounding our lives becomes more invisible, we become further removed from reality or nature (Feenberg, 2003a: 329). Pre-device paradigm, our tools—our Heideggerian “things”—moored us to the world. Not only was a communal well the source of water in the same way as a spigot, a well was also a community’s proverbial office water cooler: a place for gossip, meeting and romantic sojourns. Borgmann, quiet Catholic that he is, points out that Abraham’s servant discovered the future wife of Isaac at a well, and a well was the location of the first kiss between Jacob and Rachel (Borgmann, 1984: 41). We have already spoken of Borgmann’s interest in centralised heating and the fact that it demands nothing of us. He compares this to the process of obtaining heat, pre-device paradigm: a division of labour wherein the procurement and ordering of firewood, the building and the maintaining of the fire, were conducted by familial constituents. It required both physical and social engagement—a multilayered, textured understanding of the

world that was more than just mere featureless *Abstandlose*: “These features of physical engagement and of family relations are only first indications of the full dimensions of a thing’s world. Physical engagement is not simply physical contact but the experience of the world through the manifold sensibility of the body” (Borgmann, 1984: 42). It is this kind of meaningful physical and social engagement that the device paradigm endangers, and without this kind of engagement we are left disempowered, mute and atomised.

By Borgmann’s 1992 work *Crossing the Postmodern Divide*, his prognosis of contemporary society at the beginning of the book is even more savage and unapologetic, proving that age has only sharpened his expository scalpel: “We live in self-imposed exile from communal conversation and action. The public square is naked. American politics has lost its soul. The republic has become procedural, and we have become unencumbered selves. Individualism has become cancerous. We live in an age of narcissism and pursue loneliness” (Borgmann, 1992: 3). The loss of “authentic” practices, Borgmann argues, has engendered an era of *hyperactivity*, *hyperintelligence* and *hyperrealism* that is synonymous with the postmodern age. For we are in the closing stages of the modernist epoch, an historical stage for which—Borgmann argues—realism, universalism and individualism were the central tenets: tenets that saw the rise of sovereign powers, industrialisation, human rights and the liberal humanist subject. However, as at the end of any age, the slow expiration of modernism has seen the “fundamental conviction begin to weaken” and the slow and inexorable erosion of those tenets (Borgmann, 1992: 48). Borgmann characterises philosophy as a kind of seismograph for these changes, citing Rorty’s *Philosophy and the Mirror of Nature* as symptomatic of the paradigmatic shift away from realism and Carol Gilligan’s *In a Different Voice* as symptomatic of a similar paradigmatic shift away from universalism—before finally making the point that postmodernity even serves to cast doubt upon our intuitions concerning the fidelity and coherence of the individual itself:

Despite its beneficence, the transformative power of postmodernism is in doubt because it has failed to resolve the ambiguity of individualism. The latter term designates the human condition that has lost its premodern communal bonds. But we lack a unified and positive understanding of the person who would answer to the term. The individual was thought to be the beginning and end of the modern project, its author and beneficiary, but this coherence was an illusion. (Borgmann, 1992: 79)

Borgmann is equivocal about the role that modern science has to play in this process. Although he concedes that any “credible” view of the way things are must be consistent with (or at the very least must not compromise) observed physical laws, he also wishes to avoid the conceit that the universe can be reduced into a mere description of its constituent bits (whether atoms, strings or otherwise), lest this inert, mindless, probabilistic view—entirely removed from human concern—serve to provide further justification for the erosion of the modernist project. Instead he asks that we



Figure 8: Kazimir Malevich, “Black Square”, 1915

grant a scientific view of the world the “proper scale”, much like “a painting that would vanish as such if viewed through a microscope or from a satellite”. Without the proper perspective, the machinery of nature becomes a mere instrument in the service of the machinery servicing our own needs, providing a hyperreal collection of “disposable and discontinuous experiences” (Borgmann, 1992: 118). So how do we find the proper perspective? Of course, we cannot merely return to the modernist triad even were we inclined to do so; although the erosion of these concepts ushered in the hyperreality against which Borgmann rails: too much damage has been done; we cannot stuff the genie back inside its bottle. So instead he proposes the adoption of a disposition he calls *postmodern realism*: “The alternative tendency [postmodern realism] is to outgrow technology as a way of life and to put it in the service of reality, of the things that command our respect and grace our life” (Borgmann, 1992: 82). Although I would almost certainly dispute the accuracy of Borgmann’s term (postmodernity’s ontological uneasiness seems to be *prima facie* incompatible with Borgmann’s normative ontology of authenticity—also see Kellner, 2000: 239) the sentiment itself seems clear enough: the incoherent products of technological processes are to be co-opted to reflect the fundamental coherence of the natural, *authentic* world and the materials it offers us: “‘Nature’ does not disappear in the crafted piece, but becomes observed and celebrated in new kinds of skills” (Tijmes, 2001: 27). Postmodern realism is but a stepping stone on the way to his true goal: the re-invigoration of authentic *focal* practices.

Although the word “focus” is now generally used to denote a central point of attraction or attention, the word finds its origin in the Latin word for “fireplace” or “hearth”. For the fireplace was the focal point of everyday activity

in the pre-paradigmatic home: the locus at which cooking, heating and interpersonal exchanges take place; the place of dwelling for the Roman house gods; the location of the mantelpiece adorned with photographs, timepieces and other sentimental *olla podrida*—in short, it was the object of attention for domestic life. (It is no accident that Malevich’s “Black Square” was first exhibited in a corner, as per a fireplace [FIGURE 8]: he wished the Suprematist image *par excellence* to supplant the cornerstone of Russian family life.) Although the word no longer carries this semantic weight, Borgmann attempts to reclaim the traditional use of “focus”, arguing that focal points are those locations like the pre-paradigmatic hearth: a central point around which human beings engage in practices that “center, orient and enlighten our lives” (Tijmes, 2001: 22). These practices are *unquantifiable*—although we can place an explicit dollar value on the amount of hamburgers sold at a fast food restaurant in any given period, we cannot do the same for a family meal “thoughtfully prepared and celebrated at home” (Borgmann, 1984: 56). These things and practices serve to provide context for our lived experiences, whether it be physical labour, meaningful social interaction or even the sheer sublimity of experiencing the unmediated trappings of nature (Borgmann, 1984: 190-191).

Of course, we have already noted that Borgmann believes that technology is not such a thing that can be revoked; finding these focal things is not merely a matter of turning back the clock—there is no possibility for redemption, here. However, Borgmann’s analysis allows us to transform technology in such a way that it is no longer a mere vehicle for products, but instead is the kind of entity or process which grants focal things and practices a *central place*. In a turn of events that no doubt appeals to Borgmann’s Catholicism, although there is no possibility for redemption, there is nonetheless the possibility for salvation. The introduction of focality into contemporary technological discourse allows for a meta-technological return to the possibility of the Aristotelian good life.

Moreover, this is not a mere question of raising the standard of living (a quantitative measure), but is instead an attempt to increase *quality of life* (a qualitative measure). By Borgmann’s reckoning, it is already the case that people collectively acknowledge the fact that an increase in technological comforts does little to increase satisfaction or happiness (at least once certain basic requirements are met), but this is but the first step (Borgmann, 1984: 106). Without some kind of collective effort towards repurposing our technology in the right way—this is, towards reintroducing focal things and practices—escape from the inertness of the device paradigm will not be possible: “The reforming of technology does not consist of a definite, implementable plan, but rather of the flowering of focality” (Tijmes, 2001: 26). As Borgmann writes, we should let the world speak to us once again:

Amidst the complication of conditions, of the *Bedingungen*, we must uncover the simplicity of things, of the *Dinge*. A jug, an earthen vessel from which we pour wine, is such a thing. It teaches us what it is to hold, to offer, to pour and to give. In its

clay, it gathers for us the earth as it does in containing the wine that has grown from the soil. It gathers the sky whose rain and sun are present in the wine. It refreshes and animates us in our mortality. And in the libation it acknowledges and calls on the divinities. (Borgmann, 2003: 294-295)

And, to conclude, what is the best articulation of this kind of collective focal practice? Borgmann—perhaps unsurprisingly—nominates worship as the most fundamental kind of focal practice: it is “not just one among many focal points” (Borgmann, 1992: 122). Although the family of focal practices is a broad church indeed—a shared meal, reading poetry, playing baseball—in a sense it is worship that is the most fundamental. “All focal practices”, Pieter Tijmes argues, “display an analogy with worship as a concentrated way of dealing with reality” (Tijmes, 2001: 27); in engaging in the act of worship, one is participating in a kind of ur-practice from which all other focal practices emerge, and to which all other focal practices return. Even games like baseball are subject to this assessment, being ideally a kind of collective and communal celebration of the authenticity of competition and athleticism and grass and wood: when played in the right way, “divinity descends on the game, divinity of an impersonal yet potent kind” (Borgmann, 1992: 135). It is a focal moment, without technology and without mediation: outside the device paradigm there is only left the pure, untrammelled pleasure of happy people involuntarily rejoicing in their own existence.

For a slightly less critical take on our relation to the technological life-world, we move to the world of Anglo-Continental philosopher of technology Don Ihde—a thinker perhaps most valuable for his attempt to reconcile Heideggerian and Merleau-Pontyan phenomenology. As one might expect, Ihde shares with Heidegger some fundamental observations, the first of which is that tools are not context-independent, but are rather related to the context in which they are used. If we recall Heidegger’s thing/object distinction, it is worth noting that in neither case did Heidegger believe the artefact to exist unmoored to anything else, as if it had erupted *ex nihilo* from the unforgiving morass of possibility. Just as the “objects” of our attention are subsumed within a systematic understanding of the orderliness of the universe, so too are the independent “things” engaged in processes and interactions with other kinds of “things” that are beyond our understanding. In either case, both object and thing must be understood *in situ*, for not doing so would necessarily leave us with an incomplete story: “there ‘is’ no such thing as an equipment. To the Being of any equipment there always belongs a totality of equipment in which it can be this equipment that it is” (Heidegger, 1977b: 97). The second observation that Ihde reclaims from Heidegger is that our artefacts are *for something*. A corollary of this fact is that the field in which equipment can be what it is is full of what Ihde calls “cross relations”—cross relations which grant the artefact a certain kind of intentionality or reference, defined by the boundary conditions of the task; the artefact is *for something*. Quoting Heidegger, he writes: “[Equipment

is] in order to _____. In the ‘in-order-to’ as a structure, there lies an assignment or reference of something to something” (Heidegger, 1977b: 97). Finally, he accepts the claims that technology is not itself an object of experience, but is rather—at least when ready-to-hand—the *means* of experience (Ihde, 1990: 32).

Conversely, he obtains from Merleau-Ponty a deeper and more sensitive appreciation of the “embodied” quality of human consciousness. In précis: rather than committing to Husserlian transcendentalism, wherein objects of our perception are collapsed with the thought of the objects of our perception, Merleau-Ponty claims that bodies cannot be separated from the world; they are moored to it by the process of perception as it occurs in one’s own body (*le corps propre*). In the face of this, Merleau-Ponty wishes to redeem the Husserlian program, and re-orient in such a way as to provide a form of genuinely phenomenological reflection without committing to Husserl’s obscure idealism. Although Merleau-Ponty preserves certain aspects of Husserl’s thought—*epoché*, for instance, is maintained though enfeebled⁹—he rejects the Husserlian transcendental subject in favour of something far more mundane: the embodied or corporeal subject.

I am, not a ‘living creature’ nor even a ‘man’, nor again even ‘a consciousness’ endowed with all the characteristics which zoology, social anatomy or inductive psychology recognize in these various products of the natural or historical process—I am the absolute source, my existence does not stem from my antecedents, from my physical and social environment; instead it moves out towards them and sustains them, for I alone bring into being for myself (and therefore into being in the only sense that the word can have for me) the tradition which I elect to carry on, or the horizon whose distance from me would be abolished—since that distance is not one of its properties—if I were not there to scan it with my gaze. (Merleau-Ponty, 2002: ix)

Merleau-Ponty argues that returning to the Husserlian transcendental object via *epoché* is an impossible task. However, it is not impossible due to say, certain epistemic impositions; rather, it is impossible because the subject itself is simply not transcendental, but is rather bodily and *immanent*. The body is the only thing that remains with us in all cases; it is the fundamental point of orientation. This is not some mundane case of the body-as-object—to assume that would be to indulge a kind of Cartesian error assuming the separation between mind and body—but rather, this body is a *lived* body with a corporeal consciousness. Although this body can well be the object of scientific study—we can, after all, examine ourself in the mirror—we must

⁹ “Reduction does not withdraw from the world towards the unity of consciousness as the world’s basis: it steps back to watch the forms of transcendence fly up like sparks from a fire; it slackens the intentional threads which attach us to the world, and thus brings them to our notice. It, alone, is consciousness of the world, because it reveals the world as strange and paradoxical” (Merleau-Ponty, 2002: xii)

nonetheless acknowledge that the body is, in some important respects, not like other objects. Though my “visual body” may suffer my gaze in the mirror and our “tactile body” may be subject to the impertinent groping of my hands, this perceived body is not the totality of the entity. When I look at myself in the mirror I see my head, arms, fingers and toes; however, if I lean in close, matching my own gaze, the perceived body disappears and “becomes divorced from objects, and reserves among them a quasi-space to which they have no access.” Similarly, if I touch my left hand with my right hand as my right hand touches an object, the “right hand as an object is not the right hand as it touches”: the first is what it *is*—flesh, skin and bones—whereas the latter “shoots through space like a rocket to reveal the external object in its place”. It is in this way that the body is incapable of being “completely constituted”, and is thus not an object in the same way that my chair is an object; though the body is always there, it can neither be completely seen nor touched (Merleau-Ponty, 2002: 105). Membraneous and shot through with contingency, consciousness itself unfurls at the point of contact with the world; the body becomes the permanent condition of experience, the “meaningful core which behaves like a general function, and which, nevertheless, exists and is susceptible to disease” (Merleau-Ponty, 2002: 46). Any other knowledge we have is in virtue of this fact, for it is completely inescapable: we are our bodies, as they are us (Merleau-Ponty, 2002: 206); it is the most fundamental axiom that we are forced to accept:

We must not wonder why being is orientated, why existence is spatial, why, using the expression we used a little while ago, our body is not geared to the world in all its positions, and why its co-existence with the world magnetizes experience and induces a direction in it. The question could be asked only if the facts were fortuitous happenings to a subject and an object indifferent to space, whereas perceptual experience shows that they are presupposed in our primordial encounter with being, and that being is synonymous with being situated. (Merleau-Ponty, 2002: 293-294)

All of which is to say: although we habitually speak of an intuitive distinction between that which perceives and that which is perceived, Ihde, following Merleau-Ponty, instead argues that the act of perception itself implies no such easy differentiation. Rather, both perceiver and perceived are inextricably intertwined: “[in] experiencing, people are as much ‘in’ the world as the world is ‘in’ them: they cannot be separated” (Verbeek, 2001: 122). Moreover, this understanding of perception as an integrative process bears meaningfully upon the intuited limits of our bodies: Ihde approvingly quotes Merleau-Ponty’s description of a woman with a feather in her hat, who can, “without any calculation, keep a safe distance between the feather in her hat and things which might break it off. She feels where the feather is just as we feel where our hand is” (Merleau-Ponty, 2002: 165). That is to say: her inherent sense of proprioception—the awareness of the location and velocity of the different parts of one’s body—has accommodated

the feather in her hat as if it were no different to her hand. This leads Merleau-Ponty (and subsequently Ihde) to conclude that perception may be “materially extended”, not being limited by the “line of my body or the surface of my skin” (Ihde, 1990: 40). This only becomes more explicit when Merleau-Ponty discusses the cane of a blind man: his interface with the object is so profound that the cane “[ceases] to be an object for him and is no longer perceived for itself” (Merleau-Ponty, 2002: 165). The world itself becomes mediated through some kind of technical artefact that is itself seamlessly integrated with the lived body. And so we are led to the first reconciliation in Ihde’s attempt to reconcile the two thinkers: Heideggerian equipment withdraws from our consideration in facilitating the performance of certain kinds of acts (readiness-to-hand), whereas the example of the Merleau-Pontean cane outlines the means by which that Heideggerian equipment allows us to better perceive—and thus better access—the world (Ihde, 1990: 40).

This emphasis on perception is one that pervades much of Ihde’s work. Near the beginning of 1990’s *Technology and the Lifeworld*, Ihde draws the distinction between two complementary modes of perception, *microperception* and *macroperception*; the former being the mode of brute sensory perception (sight, touch, equilibrioception, hearing, etcetera) and the second being a kind of cultural or “hermeneutic” perception. They are complementary because neither can operate without the other: microperceptual sensory/bodily data cannot help but be read (we cannot encounter it naïvely), just as microperception provides context and orientation for that macroperceptual reading (Ihde, 1990: 29). 2002’s *Bodies in Technology* continues this theme, though with a slightly adjusted nomenclature. Rather than speaking of macro- and microperception, Ihde instead prefers the terms *body one* and *body two*, with the added implication that body one is the phenomenological locus of microperceptual data: it is “the sense of being a body”. Meanwhile, body two—the macroperceptual locus—is the “zone of bodily significance”; just as the process of macroperception impregnates the world with meaning, so too is body two pregnant with social and cultural constructions, such as the contingent locations and properties of erogenous zones (Ihde, 2002: xi). However, cutting across both of these bodies is a third aspect to the analysis: the aspect of the *technological* that Melissa Clarke, in her review of Ihde’s book, dubs “body three” (Clarke, 2004: 339).

Although Ihde himself seems reasonably happy with Clarke’s amendment to his theory,¹⁰ I would perhaps dispute the necessity of her inclusion. For it seems to me that what makes technology important is that it is not itself a body, but that it serves to inform and constitute the qualities that define and differentiate bodies one and two. To wit: if body one is the locus of microperceptual data, then the capacity of technology to effect a change in both the means by which we receive perceptual information and kind of perceptual information then we receive—for example, the visible rendering of infrared energy by thermographic cameras—then technology can be said

10 See “A Response to My Critics”, Ihde, 2003: 113.



Figure 9: Thermal image of steam locomotive made by infrared camera

to impinge upon body one in some important way by virtue of instantiating a *technological relation*. Likewise, if body two is the locus of macroperceptual data, then our understanding of body two is similarly contingent upon technological relations—as in the case of (following Ihde’s example) James Laver’s work on the shifting nature of female erogenous zones in his 1937 fashion history classic *Taste and Fashion*:

The female body consists of a series of sterilized zones, which are those exposed by the fashion which is just going out, and an erogenous zone, which will be the point of interest for the fashion which is just coming in. The erogenous zone is always shifting, and it is the business of fashion to pursue it without ever actually catching it up. (Laver, 1945: 201)

Furthermore, this technological relation between bodies one and two can itself be divided into a number of separate relations that, all together, constitute technological relations. We will briefly discuss each in turn.

Mediation relations are those relations that allow us to experience the world via our artefacts; our perception and our activities are enacted through our technologies. Recalling Merleau-Ponty’s blind man’s cane or our thermal camera, technology in a mediation relation allows us to access—or, at the very least, better access—the world. This is in distinction with unmediated perception which is perception that occurs without the aid of artefacts. In a move with which Allen would disagree, Ihde endorses the possibility of a kind of “naked perception” that is not pre-interpretive, but merely operates without artefactual intervention. Ihde schematises the distinction between unmediated perception and mediated perception as follows:

unmediated relation: I—world

mediated relation: I—technology—world

Ihde then further speciates mediation relations into two additional kinds of relation. The first, *embodiment relations*, are those relations such that I have with my eyeglasses; my relationship with the glasses is so close (they are so “ready-to-hand” according to the Heideggerian schema) that I am not consciously aware of them unless they are somehow brought to my attention. Were I without my glasses, my perceptual experience would be presumably direct and unmediated, and I would perceive—instead of my laptop and a happy chaos of books—an ugly melange of colours and blurry polygonal shapes. Conversely, my glasses—assuming that they are fitted with the correct prescription and have a form that is amenable to sitting on the bridge of my nose—seemingly disappear into my bodily schema. I do not perceive the glasses themselves, but rather I perceive *through* them; they withdraw from my perception. The same is true for Merleau-Ponty’s feathered hat or the blind man’s cane; the devices themselves are somehow transparent to the body; what Ihde calls an “enigma position” emerges between the collapse between “I” and “technology”, as our devices aid us in facilitating meaningful action whilst allowing the world to be given through the artefact itself:

embodiment relations: (I-technology) → world

The other kind of mediated relations that Ihde discusses he dubs *hermeneutic relations*, as they allow us to better understand the world by virtue of reading an artefact. In this case, the enigma position has changed place, being instead between “technology” and “world”; contra embodiment relations, the device does not withdraw from our attention, as in embodiment relations, but rather reveals an aspect of the world that would have been hitherto inaccessible. That is to say: it is not the device itself that is being read; rather, the device becomes a means by which we perceive. Our thermographic camera is a device of this kind. Although I may be able to detect heat sources due to the electrochemical network of nerves embedded in my skin, the thermographic camera makes explicit this relation via a kind of hermeneutic process: the device *reads* the world and then provides a translation for the data—whether by virtue of providing a thermal image, or whether by rendering that perceptual data into degrees Fahrenheit or Celsius, or even by rendering the information into a heartbreakingly beautiful piece of contemporary prose. It is this translated representation of raw data—this hitherto inaccessible aspect of the world—that we access in hermeneutic relations (Ihde, 1990: 73-96):

hermeneutic relations: I → (technology-world)

Moving away from mediated relations, Ihde also introduces the possibility of what he calls *alterity relations*, or relations that are strictly between the “I” and “technology”. It seems clear that in mediation relations (whether they be embodied or hermeneutic), the “I” and the “world” are each the other’s *other*; they have a kind of tensile, inextricable, mutually constituting relationship. However, in the case of alterity relations, “world” is neatly

removed from the schematic and “technology” takes its place, becoming a kind of *quasi-other*. He borrows the term “alterity” from Emmanuel Lévinas’ *Totality and Infinity*, taking it to mean “the radical difference posed to any human by another human, an *other* [...]”. Extrapolating radically from within the tradition’s emphasis upon the non-reducibility of the human to either objectness [...] or as a means [...], Levinas poses the otherness of humans as a kind of *infinite difference* [...]” (Ihde, 1990: 98). Although phenomenologically distinct from our relationship with either other human beings or non-human animals, Ihde describes alterity relations as the kind of relationship that occurs when we treat objects *as if* they were an other (thus “quasi-other”). He writes:

The religious object (idol) does not simply “represent” some absent power but is endowed with the sacred. Its aura of sacredness is spatially and temporally present within the range of its efficacy. The tribal devotee will defend, sacrifice to, and care for the sacred artifact. Each of these illustrations contains the seeds of an alterity relation. (Ihde, 1990: 99)

The alterity relation describes technology when it is in the capacity as something to be *interacted with*, such as a spinning top, or a computer, or an automatic teller machine. They are fascinating because there is something strangely autonomous about them, in the same way that human beings and other animals are autonomous—they appear to have some kind of Being or form of life which is not contingent upon our interaction or continued intervention. That is to say: although their animation is superficial and the appearance of automation is but a mere semblance, they nonetheless *demand our attention* because they appear to be, in some important phenomenological respect, *like us*. Rather than simply enabling us to differently access the world as in mediation relations, the device itself becomes the object of our attention because it compels us to do so. Accordingly, Ihde argues, the relation can be articulated thus:

alterity relations: I → technology-(-world)

Finally, there are *background relations*, which are the most subtle of all technological relations. If embodiment, hermeneutic and alterity relations can be understood to exist upon a kind of spectrum or continuum—embodied relations occurring when “I” and “technology” collapse into one another at the site of the enigma position, alterity relations occurring when “technology” is treated as a kind of attenuated other, and hermeneutic relations existing somewhere in the middle—background relations are not explicitly related to the “I” at all, but rather serve to provide and shape “the context of our experience in a way that is not consciously experienced” (Verbeek, 2001: 132). This kind of relation has a great deal in common with a certain articulation of Borgmann’s device paradigm, being constituted of silent, automatic technologies such as central heating and refrigeration. In a way not dissimilar to embodiment relations, background relations are only detected

in the effect of some kind of mishap or error. However, their influence is far more subtle, for they provide the necessary context for the other kinds of relations we have already discussed; indeed, many (if not most or all) instances of embodiment, hermeneutic or alterity relations would be impossible without the mute cooperation of background relations.

Through this analysis of the kinds of relationships we have with our technologies, Ihde does something rather novel when compared to his antecedents and colleagues: he outlines a brief but nonetheless helpful taxonomy of the different *kinds* of objects that we encounter. Although Heidegger, Feenberg and Borgmann present deep analyses of technology as a whole and the kinds of internal pressures to which it is subject, Ihde is the only one concerned by the fact that we can have phenomenally distinct kinds of experiences with our devices, and that these experiences help constitute what those devices are.

It seems obvious that Ihde's sensitivity to objects is a product of the debt he owes to Merleau-Ponty. Although Merleau-Ponty at no point developed a theory of artefacts, his work on embodiment could well be understood as a kind of proto-theory of artefactual engagement; and, moreover, it seems that Ihde himself was made early aware of this fact and has run with the concept ever since. However—particularly as Ihde's scholarship in this field will recur in the next chapter—it is worth now addressing what may well appear to be a burgeoning concern: namely, that Ihde's theory of embodiment relations runs counter to the aims of the phenomenological program by virtue of the causal story it presents. Certainly, if we return to Ihde's articulation of the embodiment relation (“I—technology—world”), there appears to be an implicit return to a kind of dualism, with “I” and “world” once again placed in dualist opposition, rather than being (as per the phenomenological story) mutually constituting. Indeed, it is perhaps tempting to conceive of the “I” and the “world” as fixed points in this conceptual schematic, with the only thing being impinged upon is the manner in which the subject experiences the object. Furthermore, any attempt to derive some kind of historical account of this mediation—technology being a point of contact between subject and object—leaves us unable to speak of technology preceding either “I” or “world”, forcing us to ungraciously recommit to either idealism or materialism.

Tempting though this characterisation is, I believe it to be a fairly profound misreading of the thrust of Ihde's argument. Although the idea of technology serving to phenomenologically constitute the “I” and “world” might seem *prima facie* a little odd, I would argue that it nonetheless holds water. Consider: Ihde asks us to acknowledge that we cannot possibly conceive of a human being without some kind of substantive material culture or technical skill. Although we might think of certain Palaeolithic and/or hunter-gatherer societies as human cultures of this type, characterising them so would be a grave disservice, and freely underrates not only their technological sophistication in the face of adverse conditions (making clothes, weapons, other palliative devices—that is to say, *body one*), but

also the cultural contingencies that are premised upon these technologies being the case (*body two*). Although Ihde allows for the possibility of a pre-technological human to exist, such a creature would have to be living in something very much like the Garden of Eden for such a lifestyle to be tenable:

What this initial imaginative exercise reveals is that it might be possible for humans to live non-technologically as a kind of abstract possibility—but only on the condition that the environment be that of a garden, isolated, protected, and stable. The price for such a non-technological existence is to be enclosed. Here would be the “milieu of nature” in purer form. But there is no such empirical-historical human form of life because, long before our remembering, humans moved from all gardens to inherit the Earth. (Ihde, 1990: 13)

We might like to think of such a creature as living an unmediated existence in the most pure form: Ihde’s “I–world” schematic. The em-dash indicates the point at which consciousness unfurls, constituting both “I” and “world”—whether the em-dash be Husserl’s transcendental subject, Heidegger’s *Dasein* or Merleau-Ponty’s embodied subject. Indeed, perhaps it would be more appropriate to replace Ihde’s em-dash with a double-ended arrow, in order to better demonstrate the conditional relationship between the respective parts: “I \longleftrightarrow world”. Moreover, given that Ihde’s technology cuts across both body one and body two, particularly in the case of embodiment relations, Ihde claims that technology can indeed be constitutive of “I” and “world”: in an attempt to clarify “I–technology–world”, I instead present an alternative formulation: “I \leftarrow (technology) \rightarrow world”, with technology partially constituting that first phenomenological point: “Mediating artifacts shape not only the way a pre-defined subject related to a pre-defined object or the way a predefined object can appear to a predefined subject. They shape the interrelation itself between subject and object, from which both are constituted” (Verbeek, 2001: 131). Our technological relations—particularly our mediation relations (embodied and hermeneutic)—not only directly impinge upon our access to reality and the way we believe it to be constituted, but also impinge upon our sense of *ourselves*; we are the partial products of our own technological mediation.

3.4 *Hominem te Esse Memento*

Assuming that Allen is correct, their points of departure from these broadly Heideggerian accounts seem obvious. First, and most obviously, is the fact that there is a broad tendency among Heideggerian philosophers of technology to consider technology somehow existentially *threatening*, whether this threat be ontological (Heidegger, Borgmann) or political (Marcuse, Habermas and Feenberg). Obviously, this is not true in all cases—Feenberg certainly allows for the possibility that technology *can* be made subject to our

collective desires (even if it is not necessarily the case that it *will*), just as Don Ihde seems to think that the purported threat to Being is of little substance or concern—but the fact that technology is anxiety-inducing seems impossible to ignore. We will explore these concerns further at the conclusion of this section. The second point of departure is that the purported ontological distinction between humans and technology is something that undercuts *all* of the scholarship in this area; there is the distinct implication that technology and humankind are not necessarily contingent upon one another. Although seemingly a minor point, the fact that even someone as sympathetic to technology as Ihde incorrectly allow for the possibility of a human being that is both linguistic and pre-technological has profound ramifications for their phenomenological programs.

In *Technology and the Lifeworld*, Ihde distinctly differentiated between what he calls unmediated perception, which is artless, bodily, unattenuated (“There, disrobing except for a modest set of swimming trunks, I first sit on the sand and look about me. The tactile sense of the breeze, the warmth of the sand, the sound of the ripples from the waves, the vision of the Persian reeds bordering the cove—are are present to my senses non-mediatedly” [Ihde, 1990: 45]); and mediated perception, which describes the phenomenon of sensing *through* something, whether the process be embodied or hermeneutic. It is our adoption of mediated perception that has served to shape our lifeworlds: as I noted at the conclusion of the prior chapter, our technological relations—particularly our mediation relations—not only directly impinge upon our access to reality and the way we believe it to be constituted, but also impinge upon our sense of *ourselves*; we are the partial products of our own technological mediation. However, Allen’s account casts doubt on the plausibility of this narrative. If, as Allen claims, skills and capacities such as language are necessarily premised upon the prior development of a material culture, then rather than human beings being the partial products of our own technological mediation, we are instead the *total* products of our own technological mediation. Material culture itself becomes the core premise upon which all recognisably human action rests, and it is a development from which we cannot return and that cannot help but inform our relationship with the Real.

If we recall, Ihde writes that “it might be possible for humans to live non-technologically as a kind of abstract possibility—but only on the condition that the environment be that of a garden, isolated, protected, and stable” (Ihde, 1990: 13). I reject even the abstract possibility of non-technological human action, for it is only with the introduction of technology that linguistic humans could begin emerging in the first place. For a creature to be *Dasein* or something very much like it (a transcendental ego, an embodied self), they must have the capability to consider their own being in some respect. It is a capacity that is, if not linguistic, then at least premised upon a kind of economy of complementary action that means that we remain unbound to the world; we are no longer enslaved by the tyranny of indexical relations. Furthermore, those creatures that are non-technological and thus

non-linguistic are to be pitied as “world-poor” for they are shackled to the world in a way that we are not: “Thus it is clear that in the animal world as a whole the way in which the animal is bound to its environment is almost as intimate as the unity of the body to itself” (Safranski, 1999: 199).¹¹ The kind of unmediated experience of which Ihde believes us capable is one that is inherently and exclusively world-poor, more akin to the experience of a sea slug or a thermostat: reacting to crude sense data, but bereft of qualitative experience. For it certainly seems to be that to be rich-in-world is to have something like the capacity for qualitative experience: experiences that can be judged, sorted by preference and compared across a wide range of criteria. However, the indexicality of world-poor experience seems to prevent this *prima facie*: the capacity for assessment, much like the capacity for language, requires that we be capable of a kind of abstraction that is premised upon participating Allen’s economy of complementary action. Indeed, I would argue that even the most “unmediated” experience remains mediated by our linguistic, cultural and material contexts.

Is it possible that Ihde’s problem is less one of confusion and more an issue of clarity: although he and I obviously differ on this point, it is not as if he is not philosophically sympathetic to the material. It does seem though that Ihde’s programme, although a step in the right direction, does not quite go *far enough* with regards to discussing the relationship with man and technology. Although ideas such as “body one” and “body two” are conceptually helpful when discussing certain elements of the problem, I would argue that they serve to impede analysis when the separation between the two serves to argue in favour of a given body being technologically mediated and the other not. Indeed, I would argue that it is both unhelpful and philosophically nonsensical to speak of unmediated relations, because every relation that we have is mediated by something—by our language (“Persian reeds”), by the presence or absence of our artefacts (swimming trunks), by our praxes (the ability to swim)—and, if they are not mediated, they are instead an example of possessing a kind of inhuman world-poorness. Indeed, it could not be otherwise; our tools help us live, help us know, and *make* us human. Nonetheless, though, niggling questions remain: if we as humans are necessarily constituted by our technology, then why do we react with such distrust and suspicion when it enriches upon our lives? If technology is literally the instantiation of *knowledge*, as Allen claims, why the post-Heideggerian fears that it will somehow threaten our political agency or attenuate our relationship with the Real?

To readers of a certain non-analytic background, Allen’s work on the origins of technics may seem quite similar to another contemporary theorist; one deeply entrenched in the Continental tradition, but who is no less iconoclastic. The story behind Bernard Stiegler and his introduction to philosophy is invariably the first thing one learns about him: incarcerated for

11 I understand that this might, by definition, exclude some *Homo sapiens* from being considered humans (very young children, those in vegetative states, etcetera), but this concern is well beyond the purview of this work.

armed robbery between 1978 and 1983, he (in a stunningly and quintessentially French development) discovered the joy of philosophy from behind bars. Eschewing the conventions of the academy, Stiegler's work in recent decades—particularly his three-volume magnum opus, *Technics and Time*—have nonetheless attracted the attention of a number of different writers in the Continental traditions, particularly in the genres of film and media studies. His appeal is obvious: two things are readily apparent when one reads Stiegler. The first is the grandness of his vision, as well as his systematic approach to solving the posed problems; freely drawing upon the work of figures such as Heidegger, Jacques Derrida and Gilbert Simondon, he provides a daring synthesis of many of the grand figures within the broader Continental tradition. The second thing of note is that Stiegler has an obvious sensitivity to the problems inherent in technics and adopts what can broadly be described as an anthropological approach to these questions. Relying heavily upon the scholarship of mid-20th century palaeoanthropologist André Leroi-Gourhan (a figure on whom Allen is unusually silent), one is struck with the distinct sense that Stiegler remains beholden to the world in a way that philosophers such as Derrida perhaps are not. It is for this reason that although *Technics and Time, 1*—the object of my exegesis in this section—is clearly characterised by a willingness to indulge in explanatory metaphor at the expense of concrete rationalisation, I will demonstrate that Stiegler's scholarship can be understood to quite happily complement Allen's artefactual epistemology in that he attempts to answer those live questions that Allen eschews.

Stiegler borrows from Leroi-Gourhan the idea that all anthropology is grounded by the interplay between what he calls the *ethnic*—"the unity of social being" (Stiegler, 1998: 25)—and the *technical*, or the material substrate that underpins lived experience. Echoing Marx's sentiments in *Capital*, it is in the interplay between these two abstractions that the active relation between man and nature is revealed.¹² The history of mankind is properly understood as the history of technics, although not in a reductive way; echoing the comments made by Feenberg earlier in this chapter, the technology available to a group of people—an ethnic group—is contingent upon a number of different factors he boils down to internal (cultural) and external (geographical) milieux (Stiegler, 1998: 59).¹³ It is the interplay between these conflicting milieux that renders contingent the forms adopted by technology. Contrary to the claims of someone like Habermas, it is clear that

12 "A critical history of technology would show how little any of the inventions of the eighteenth century are the work of a single individual. And yet such a book does not exist. Darwin has directed attention to the history of natural technology, that is, the formation of the organs of plants and animals, which serve as the instruments of production for sustaining their life. Does not the history of the productive organs of man in society deserve equal attention? [...] Technology reveals the active relation of man to nature, the direct process of the production of his life, and thereby it also lays bare the process of the production of the social relations of his life, and of the mental conceptions that flow from these relations." (Marx, 1976: 493, n. 4)

13 This distinction shares obvious similarities with Ihde's *body one* and *body two* distinction articulated earlier.

Stiegler and Leroi-Gourhan acknowledge that although the forms adopted by technologies are constrained by given boundary conditions reflected in physical laws or the human body, deference must nonetheless be paid towards both cultural sentiments (as in the case of Feenberg’s analysis of the game of Go) and also realities of geography—natural resources, relationship with neighbours, general climate. So Stiegler writes that the “technological tendency”—this tension between internal and external—comes “from an enigmatic *intention* of the interior milieu, [... which] diffracts into a diversity of facts, like a ray of light passing through an aqueous milieu when it is reflected by the exterior milieu [...].” (Stiegler, 1998: 60). Stiegler then quotes Leroi-Gourhan:

The [technological] tendency is proper to the interior milieu; there can be no tendency of the exterior milieu: the wind does not propose a determined roof to the house, the human gives to its roof the most favorable profile. [...] The exterior milieu behaves like an absolutely inert body into which the tendency collides: the material sign is found at its point of impact. [...] Empowered, thanks to its universal nature, with all the possibilities expressible in general laws, the tendency cuts across the interior milieu, which is suffused by the mental traditions of each human group. It acquires therein special properties, as a ray of light acquires diverse properties in crossing through different bodies, and encounters the exterior milieu, which offers to the acquired properties an irregular penetration; and at the point of impact between the interior and exterior milieus this membrane of objects constituting the furniture of humans materializes. (Leroi-Gourhan, 1945: 339 in Stiegler, 1998: 60)

Furthermore, echoing Feenberg, there seems to be a clear sense that the fact that this technology is contingent does not make it in any way *incidental* to historical outcomes. As seems perfectly clear, technology is not merely and passively instrumental, but is rather a substantive constituent in the realm of human action: despite what appears to be a common intuition to the contrary, our artefacts not only have a material effect on the kinds of actions we *can* take, but also on the kinds of actions we *do* take. There is a clear parallel to Allen’s comments on complementary, elaborate networks of tools: tools which not only rely on other tools in order to have any clear use, but that also allow for the possibility of new kinds of objects and thus new kinds of actions: “Having the principle of the wheel gives one that of the chariot, the potter’s wheel, the spinning wheel, the lathe; knowing how to sew provides not only a piece of clothing of a particular form but also vases of sown bark, sown tents, sown dinghies; with the master of compressed air comes the blowpipe, the piston lighter, the piston bellows, the hypodermic needle” (Leroi-Gourhan, 1943: 41, in Stiegler, 1998: 53).

But it is Stiegler’s scholarship on what constitutes the human that has the most distinct resonance with Allen’s program. He phrases the question in distinctly Heideggerian terms: “technology has disquietingly cast

doubt upon, while perhaps for the first time directly confronting, the very form of this question: what is the nature of the human?” (Stiegler, 1998: 88)—it seems reasonably clear that both writers are preoccupied with the same fundamental observation: the the human being is necessarily constituted by the presence of our technics. However, what each thinker does in response to this realisation is where things begin to get interesting. Already we have seen Allen’s response to the quandary: that our tools are both human- and world-constituting by virtue of their epistemic significance. Knowledge of the world is praxis, performance; generating the right kind of artefact (whether physical, lexical, cybernetic, etcetera) in response to not only the task at hand, but that makes the right kinds of concessions to the boundary conditions of both the world and lived experience. However, Allen’s account is plainly not the whole story: even if we do buy into his artefactual epistemology (and I do), he provides no adequate account for the kinds of anti-technological intuitions that dominate the first chapter of this work. If the relationship between technology and knowledge is so indelible, then why is it that human beings suffer these suspicions that our technology serves to attenuate our relationship with or otherwise disenfranchise the world? What is it about technology and rationalisation that led Max Weber, in 1920, to claim that industrialisation was responsible for the “disenchantment” of the world in his *Sociology of Religion* (Weber, 1966)—a world wherein “everything becomes understandable and tameable, even if not, for the moment, understood and tamed. Increasingly the world becomes human-centred and the universe—only apparently paradoxically—more impersonal” (Jenkins, 2000: 12)? Allen is deafeningly silent on this point. Stiegler, however, is not. Indeed, Stiegler notes that even though the interior and the exterior are mutually constituting, the “double constitution is also that of an opposition between the interior and the exterior” (Stiegler, 1998: 142). As Stiegler argues, this doubt surrounding the realm of technics—this intuitive opposition between interior and exterior—is indelibly tied into the question of death.

Stiegler, like Allen, traces the origin of the symbolic order to the development of technics. The story finds its metaphorical beginnings in the Platonic retelling of the myth of Prometheus, with Prometheus giving man fire in an effort to offset the error of Epimetheus; the origins of the human being are found in the moment when man makes the first tools, with flint “the first reflective memory, the first mirror” (Stiegler, 1998: 142).¹⁴ It is in the process

14 “Once upon a time, there existed gods but no mortal creatures. When the appointed time came for these also to be born, the gods formed them within the earth out of a mixture of earth and fire and the substances which are compounded from earth and fire. And when they were ready to bring them to the light, they charged Prometheus and Epimetheus with the task of equipping them and allotting suitable powers [*dunameis*] to each kind. Now Epimetheus begged Prometheus to allow him to do the distribution himself—‘and when I have done it,’ he said, ‘you can review it.’ So he persuaded him and set to work. In his allotment he gave to some creatures strength without speed, and equipped the weaker kinds with speed. Some he armed with weapons, while to the unarmed he gave some other faculty and so contrived means for their preservation. To those that he endowed with smallness, he granted winged flight or a dwelling underground; to those which he increased in stature,

of interfacing with the material—eye and hand and stone, in the “anterior field”, as Leroi-Gourhan dubs it—that we find our own interiority speaking to us. This capacity obliquely reflects itself, “somber, buried, freeing itself from the shadows like a statue out of a block of marble”; it unfurls in and is constituted by the reflexive point of contact between mind and world: where we find our own *internal* intentions marked upon the world, though necessarily limited by the *external* facts that the world imposes. The creation of the first human is a paradox, for we speak of an exteriorisation (the first stone tool) without that exteriorisation being exterior to *something*, without an intelligent and intelligible homunculus having taken up residence behind one’s eyes. Instead, echoing Allen’s basic phenomenological point, the interior is instead *constituted* by that first tool-making act: “The movement inherent in this process of exteriorization is paradoxical: Leroi-Gourhan in fact says that it is the tool, that is, *tekhne*, that invents the human, not the human who invents the technical. Or again: the human invents himself in the technical by inventing the tool—by becoming exteriorized techno-logically” (Stiegler, 1998: 141). Thus we see in Stiegler that Leroi-Gourhan’s interior and exterior are collapsed into a single entity: the man is defined by the tool he wields, but the tool itself is rendered impossible without the presence of the man. Speaking of one preceding the other is naught but foolishness.

This human-making capacity for tool-creation, Stiegler argues, has a fundamental relationship with the Derridean concept of *différance*, arguing in *Technics and Time, 1* that the development of the *grammē* (cf.: Derrida, 1998) is synonymous with the development of the human being: “[*différance* is] above and below the *who* and the *what*; it poses them together, a composition engendering the illusion of an opposition. The passage is a mirage: the passage of the cortex into flint [...]” (Stiegler, 1998: 141). Far older than “specifically written human forms” (Stiegler, 1998: 137), *grammē*—any

their size itself was a protection. *Thus he made his whole distribution on a principle of compensation, being careful by these devices that no species should be destroyed. . . .* Now Epimetheus was not a particularly clever person, and before he realized it he had used up all the available powers on the brute beasts, and being left with the human race [*non-aloga*] on his hands unprovided for, did not know what to do with them. While he was puzzling about this, Prometheus came to inspect the work, and found the other animals well off for everything, but man naked, unshod, unbedded, and unarmed, and already the appointed day had come, when man too was to emerge from within the earth into the daylight. Prometheus therefore, being at a loss to provide any means of salvation for man, stole from Hephaestus and Athena the gift of skill in the arts [*ten enteknen sophian*], together with fire—for without fire there was no means [*amekhanon*] for anyone to possess or use this skill—and bestowed it on man. In this way man acquired sufficient resources to keep himself alive, but he had no political wisdom [*sophia*]. This art was in the keeping of Zeus. . . . Through this gift man had the means of life, but Prometheus, so the story says, thanks to Epimetheus, had later on to stand his trial for theft.

Since, then, man had a share in the portion of the gods, in the first place because of his divine kinship he alone among living creatures believed in gods, and set to work to erect altars, and images of them. Secondly, by the art which they possessed, men soon discovered articulate speech [*phonen*] and names [*onomata*], and invented houses and clothes and shoes and bedding and got food from the earth” (Plato, *Protagoras*, quoted in Stiegler, 1998: 187-188).

one of arbitrary marks from which our signs are constructed—is the object of the “general history of life” (viz.: *différance*). To track the path of the *grammē* is to engage in a history of our signs and our grammars; to mark the process by which the human being is able to not only mark between what *differs* between entities in the realm of space, but also to introduce a temporal axis by virtue of articulating that which is *deferred*. That it to say: it seems reasonably clear that what Stiegler is describing is the process by which human beings develop the capacity to enter and manipulate a symbolic order—the kind of ability that allows me to say things like “I saw a leopard last year whilst on safari” or “Imagine that you are faced by a hungry leopard”. If the capacity for *différance* is the capacity to not only speculate or differentiate objects and things, but also to discuss them in regards to other things—whether spatially, temporally, conceptually or existentially—then the development of the capacity for *différance* indicates a break away from animalistic, sphexish indexicality. We are, in short, speaking of the creation of syncategoremata whether linguistic or artefactual; the history of the *grammē* is the history of the symbolic order itself.

And so it is the case that when Prometheus (“foresight”) came down from the heavens to gift mankind with fire in order to correct the error of his brother Epimetheus (“hindsight”), he becomes single-handedly responsible for the birth of the first symbolic order; this rupture is the site of the first *grammē*, and thus the birth of *différance*. Having noted the polysemy of *différance* (to differentiate in space; to defer in time), the birth of a symbolic order—even one that is technical or artefactual—situates us in the temporal realm: “Before the [Promethean] fault, nothing had happened” (Stiegler, 1998: 189). Now able to think of objects as being *in time*, Dasein becomes able to project itself forwards and backwards in that time: we are able not only to inductively extrapolate that which came before us based upon the available evidence, but we also become able to imagine that the future, like the past, is similarly not contingent upon our observation of it. In exhibiting *elpis*, or being-toward-death, we are able to imagine a future that does not contain us; we become aware of ourselves as mortal entities, as beings of limited span upon the Earth (Stiegler, 1998:198).

Accordingly, Stiegler believes that anthropogeny, or the origin of mankind (that is, the origin of technics), commences humanity’s hopeless relationship to the divine: “the real issue here concerns *the relation of mortals to immortality*” (Stiegler, 1998: 189). Unlike animals doomed to live or perish, it is with the development of a symbolic order that we begin to understand ourselves as *mortal*. For, Steigler writes, we should understand that the human is less an animal with additional qualities than it is an *immortal* without the property of immortality (Stiegler, 1998: 190). Unlike the merely perishable creatures that comprise the natural world, human beings are not defined by our positive qualities; instead, we are only noteworthy by virtue of the fact that we have a relative *lack* of capacities and powers. Thus he argues that whereas we might say that a lion or a crocodile or a gazelle is in some sense an aggregate of more primeval forms, a human being is better understood

by what it is *not*.¹⁵ Although this might seem bizarre, we find echoes of it in Allen's scholarship: whereas lions have claws, crocodiles have teeth and gazelles have long legs, the "functionless functionality" of the human hand—and the human body more broadly—is indicative of a kind of physical and ontological lack. Just as our tools require users in order to be made sensical (cf.: Arnheim, 1969: 89-90), so too do our hands require prostheses.

Without natural qualities, excepting maybe a large brain and the rather modest capacity to pinch our forefingers to our thumbs, we overcome this qualitative vacuum by manufacturing prosthetic qualities: "[humanity] must invent, realize, produce qualities, and nothing indicates that, once produced, these qualities will bring about humanity, that they will become its qualities; for they may rather become those of technics" (Stiegler, 1998: 193-194). Accordingly, we orient ourselves and our limitations by posing the possibility of immortality as a kind of conceptual limit; it is only in addressing our physical and mental limitations in the face of a hostile universe that we are able to overcome them with the aid of our artefacts. Subsequently, not only is technology responsible for making us aware of our ontological lack (that is: immortals without immortality; mortals without properties), it promises to provide a means of escape from this condition that is "both forgotten and unforgettable, since it is re-evoked and recalled antithetically by the counterimage of the Immortals" (Stiegler, 1998:190). In effect, our relationship with the technical and divine is nothing more than an admission of our own weakness. Our prosthetics serve in the stead of natural qualities, with our form of life "entirely made up of trepidation at the conditions of technicity (its power, implying equally the powerlessness of mortals)" (Stiegler, 1998: 189).

Animals are perishable; humanity is mortal. There is a difference, and this difference is marked in the text by the reference to the cult of the gods. Humanity, *qua* mortal, "has a share in the portion of the gods" (Plato 1961, *Protagoras*, 322a). Its mortality appears through its relation to immortals for whom it erects temples and fashions images. It is only then (*epeita*) on the basis of this partaking that it acquires "the art of emitting sounds and swiftly articulating nouns" (322a). Once this difference with beings deprived of reason or *logos*, *aloga* (unable to mimic immortals because not partaking of their lot) is made, the unqualifiable race will have become *logoin*, logical, endowed (but through default) with *logos*. To partake of the lot of immortals means to endure one's mortality by the fact of being in (privative) relation with immortality. (Stiegler, 1998: 195)

15 "[Whereas] animals are positively endowed with qualities, it is *tekhnē* that forms the lot of humans, and *tekhnē* is prosthetic; that is, it is entirely artifice. The qualities of animals make up a sort of nature, in any case a positive gift of the gods: a predestination. The gift made to humanity is not positive: it is there to compensate" (Stiegler, 1998: 193).

Consequently, Stiegler argues that our prostheses should, as palliative exercises that ease the pain of being alive, also be understood as “marks of mortality”—as reminders of not only our physical weakness but also our ontological lack (Stiegler, 1998: 198). However, as reminders of our mortality, they concern or frighten us; faced with these reminders, we do all we can to ensure that their visibility is reduced (Stiegler, 1998: 199). And so it is that we design better and better objects, artefacts, technologies; we subsume working parts into sleek, oblique black boxes that work quietly and efficiently without our input: “There is a teleologism in technics linked to the principle of tendency. [...] [The] technical system develops in ever-growing complication and integration; [...] the phenomenon of concretization, that is, of their tendential path [*acheminement*] toward perfection” (Stiegler, 1998: 54). This seems Stiegler’s take on Heidegger’s point in *The Question Concerning Technology*: although we lose something of the world when we instrumentalise our surroundings, we do so because of the existential tension—the Heideggerian “danger”—that occurs as we occupy the liminal space between animal perishing and the immortality of the gods.

A metaphorical analysis indeed, as I fairly warned. However, without relying too heavily upon the Derridean literature that Stiegler obviously takes quite seriously, it seems unfair to think that Stiegler’s description of technology as a mark of mortality is without value. Indeed, I think such an understanding quite happily complements Allen’s artefactual epistemology: we seek superlative performances because they ease the pain of living; they ease the pain of living because they distract us from the existential realities of being mortal.¹⁶ Moreover, the ability to render technology invisible also fulfils at least two of Allen’s criteria for accomplishment: appropriateness (if an artefact is truly invisible to us, it is maximally ergonomic, affordable and efficient) and design quality (a measure of superlativeness). However, this complementary analysis still leaves us with one final question: if the invisibility of technology is broadly a sign of technical accomplishment—at least in the sense that it successfully deludes us into forgetting that we will one day shuffle off this mortal coil—why then do we distrust the invisibility of technology, particularly the invisibility of those technologies (power plants, air conditioning, mobile computing) that have occurred since the advent of the Industrial Revolution?

Stiegler, quoting Simondon, notes that “culture has made itself into a system of defense against technics, in which the defense is presented as a defense of humanity, supposing that technical objects do not contain human reality. [...] If there is such a thing as the alienation of humanity (or of culture) by technics, it is caused not by the machine but by the misunderstanding of its nature and essence” (Simondon, 1958: 10, in Stiegler, 1998: 66). Assuming we are to follow Stiegler’s lead, it seems clear that these

¹⁶ We wish to escape the warning given in Tertullian’s *Apologeticus*: “Look behind you! Remember that you are but a man! Remember that you’ll die!” (*Respice post te! Hominem te esse memento! Memento mori!*).

intuitions are clearly the product of a cognitive error, a kind of general misunderstanding of our terms of engagement with the world. However, it also seems clear that it would be harmfully reductionist if we were to simply write them off because they are mistaken; plainly there is a very specific kind of anxiety being exhibited that deserves an equally specific response. To this end, we have already spoken of the fact that our technology takes on forms contingent upon the interplay between internal and external milieux: it evolves not only due to the internal pressures of culture, but also to the external pressures of geography and political circumstance. In a broader evolutionary sense, this is not particularly unusual; as evolutionary biologist Stephen Jay Gould noted, biological evolution, like its technological counterpart, is “a dialectic of inside and outside, not ecology pushing malleable structures to a set of adaptive positions in a well-oiled world” (Gould, 1989, p. 30). However, what differentiates human beings from merely perishable animal life is that we have the ability to completely artefactualise our environments, as per Allen on urbanisation: “A city is an architectural actuality, an immensely complex physical artifact, and today there is no way out of the urban net. There is no outside. The human future is urban so far as it can be seen at all” (Allen, 2005: 266). Although other animals may act upon their environment in a substantive way—and thus serve to partially constitute said environment (beaver dams, termite mounds)¹⁷—it is only human beings that can *completely* constitute our own environments with our behavioural products.

What happens when there is no longer any exterior milieu as such, so-called “physical” geography being saturated with human penetrations, that is, technical ones, and the principle relations of interior to exterior milieus being mediated by a technical system having no “natural” remainder in its wake? One wonders if the technical system, being now worldwide, does not form a realm in which the distinction between interior and exterior milieu, having totally altered their relations, has become highly problematic, and if the technical group does not find itself totally emancipated from the ethnic group, an archaic remnant. (Stiegler, 1998: 64-65)

What happens, of course, is what Allen describes in *Knowledge and Civilization* and Ihde mentions in *Technology and the Lifeworld*: our artefacts and technologies no longer interact with one another via a human agent (the hammer hits a nail, wielded by a human arm), but interface directly with one another. At any one time, my modest little laptop is conducting

¹⁷ “Environments cannot be conceptualised (or even operationalised) as objective places or circumstances in a world fully external to the organisms involved. First of all, environments include all interactions with other organisms, both conspecific and belonging to different taxa, and not just the climates, substrates and other more measurable properties of a surrounding physical world. Second, and more important, [...] environments are intrinsically referential, and actively constructed by the organisms in question. Environments, in short, are made, not found” (Gould, 2002, p. 707).

thousands of parallel computations; my car, having detected that the ambient temperature is high, thoughtfully turns on the air conditioning; the interest generated by the money in my bank account dynamically and automatically fluctuates according to both bank policy and the amount of cash contained therein. Moreover, in heaven as it is on earth: in 2012, over 60 per cent of stock trades were conducted by computer programs in what is called algorithmic or black-box trading;¹⁸ while the methods of modern warfare have changed irrevocably with the now-widespread practice of using semi-automated combat drones, particularly in rural and remote areas of South Asia and the Middle East.¹⁹ Indeed, it seems clear that although it is true that, prior to the Industrial Revolution, most technological relations were either mediated or alterity relations as Ihde describes, the tenor and form of contemporary technoculture guarantees that most technological relations are in fact *background relations* of a very specific kind. That is to say: although it is true that something that might be a background relation for me (my relationship with the ambient air temperature) will be a mediated or alterity relation for someone else (i.e.: an air conditioner repairman), what Stiegler, Simondon and Allen are describing is an hitherto unencountered technological relation: a relation that exists entirely without human mediation. Adding to Ihde's taxonomy, I would call it an *Epimethean* relation—a relation where the human being has been forgotten. As Stiegler writes: “Technical evolution stems completely from its own technical object. The human is no longer the *intentional actor* in this dynamic. It is its *operator*” (Stiegler, 1998: 66):

technology \longleftrightarrow technology

This, I believe, is the *political* aspect of the Heideggerian suspicion of technology. Although we may speak of the loss of being, what we are really mourning is the loss of our own sense of agency, of having been shunted aside by something mute and unintelligible. It is not only the world that is disenchanted by science and technology, contra the claims of Weber, Heidegger and Borgmann; rather, it is our sense of our own agency, our own capacity for intelligible action, that has been disenchanted. Driven by the need to reduce, to render automatic our technologies, we—having been successful thus far in our endless quest—are instead faced with the problem that they are now *too* invisible; that not only is the world beyond our reach (per Heidegger and Borgmann), but we are no longer in the driver's seat: “In the industrial age, the human is not the intentional origin of separate technical individuals qua machines. It rather executes a quasi-intentionality of which the technical object is itself the carrier” (Stiegler, 1998: 67). This is automatism, the price of palliation: our lives get easier, but at the expense of the extent of our perceived capacity for freedom. We can rely on the fact that

18 “In 2005, the average time to execute a trade on the New York Stock Exchange was 10 seconds. By 2012, that time dropped to 8/10,000 of a second” (Poppick, 2013.)

19 For an interestingly Heideggerian take on the use of drone warfare, John Naughton's piece in *The Guardian* from April 2012, “Cyberwarfare takes Heidegger's ideas to their logical end”, is well worth a look (Naughton, 2012).

our physical lives are made better by virtue of inhabiting our artefactualised lifeworlds—we live longer; our food is cheap and packed with delicious sugars and fats; we consume iPhones and sports cars; we can rely on the safety nets of education and healthcare—but with all life reduced to mere *zoë*, we are no longer capable of true social or political agency, of *bios*: “Agency is an anxious topic [. . .]. As the automatic machine becomes increasingly suggestive of agency, any appearance of the automatic in human behaviour conversely seems to suggest loss of agency. It was as though agency could leak from bodies into machines through the circuitry by which they were interconnected” (Goodall, 1997: 441). Although our lives are no longer solitary, poor, nasty, brutish, and short, the fear seems to be that we have left the state of nature and exchanged it for an existential threat: even despite Feenberg’s claims to the contrary in favour of the power of human agency, we are struck with the intuition that we are painlessly and unconsciously entering a form of servitude that must indelibly change the character of lived experience.

However, even this fear is premised upon a more profound, distinctly Heideggerian terror: one that not only threatens the quality of our lived experience, but also the kind of creatures that we are and the Being that we are afforded. Like Marcuse, Borgmann, and Stiegler, Heidegger is keenly aware that there is a kind of tension apparent in automatising technologies that seems to denude us of agency, whether political or ontological. Moreover, he argues in “The Age of the World Picture”—as he does later in “The Question Concerning Technology”—that this is an inherent and integral aspect of the post-industrial era: in committing to this course of action humanity denudes the world of its Being: there are no longer *things* with intrinsic qualities and functions, but rather the world is understood to be filled with objects—entities that can only be understood with respect to humanity as the “relational center” (Heidegger, 1977a: 128). The world becomes an instrument, subject to our collective will: “[A] world picture, when understood essentially, does not mean a picture of the world but the world conceived and grasped as picture” (Heidegger, 1977a: 129). This process of conceiving of the world of a picture is of absolute and profound importance in understanding that constitution of the post-industrial era and our place within it: “the fact that the world becomes picture at all is what distinguishes the essence of the modern age” (Heidegger, 1977a: 130).

Most significantly, in making the world a picture we ascend to the central position, having strived for domination and mastery over what is via our technology: “that the world becomes picture is one and the same event with the event of man’s becoming *subiectum* in the midst of that which is” (Heidegger, 1977a: 132). Humanity constructs the world as an image—an image that is *for us*, rather than for itself—and the world therefore owes itself to us; it owes us, because we are all that sustains it. Our “share of the gods” as Stiegler writes, referring to Plato, becomes inflated; we now approach the world as *if we were* gods ourselves (Stiegler, 1998: 195). Allen’s comments, quoted in CHAPTER 2, reflect such a sensibility: “The end of human

life is the end of the world, beyond which is—*nothing*. Human existence and activity make a world where otherwise there is—*nothing*. Kick a stone if you like. Slap the table if it helps. That does not prove that in the absence of human beings such a thing as a stone or a star *exists*” (Allen, 2005: 30). Moreover, the more that the world becomes a mere representation, the more it can be subject to our desires, becoming entirely a world of our making, as Borgmann so astutely observes. In the age of the world picture, without metaphysics, without morality and without gods, we have become self-legislating; the law of the world finds itself shunted aside in favour of the laws we provide. As Heidegger writes in “The Question Concerning Technology”: “Man [...] exalts himself to the posture of lord of the earth. In this way the impression comes to prevail that everything man encounters exists only insofar as it is his construct. This illusion gives rise to one final delusion: It seems as though man everywhere and always encounters only himself” (Heidegger, 1977b: 27).

We have already made mention of Weber, and how the development and application of modern technology seems to invariably lead one into disenchantment. Heidegger is very much touching upon a similar sentiment here; when Weber writes that “there are no mysterious incalculable forces that come into play, but rather that one can, in principle, master all things by calculation. This means that the world is disenchanted” (Weber, 1991: 139), Heidegger appears to be making the same point: that with the world rendered into data, there is no longer any place for making the inexplicable explicable. *Poiesis*—one of the processes that constitutes *Dasein*—no longer occurs as there is no longer any Being to bring forth. Without distance, there is no mystery; having abandoned both nature and the gods, we also abandon the transformative potential of art, with art “moving into the purview of aesthetics” (Heidegger, 1977a: 116). Even art becomes subject to the interrogative gaze of scientific ontotheology, wherein scientific data is privileged and subsequently used to explicate all other entities; artworks are no longer understood to be *things* to be experienced, but *objects* to be dissected, speciated, judged. With the world made plastic, the quality and colour of our experiences ignored, our “god-like” experience of the world becomes a torrent of data without ontological or metaphysical content.

All distances in time and space are shrinking. Man now reaches overnight, by plane, places which formerly took weeks and months of travel. He now receives instant information, by radio, of events which he formerly learned about only years later, if at all. The germination and growth of plants, which remained hidden throughout the seasons, is now exhibited publicly in a minute, on film. Distant sites of the most ancient cultures are shown on film as if they stood this very moment amidst today’s street traffic. Moreover, the film attests to which it shows by presenting also the camera and its operators at work. The peak of this abolition of every possibility of remoteness is reached

by television, which will soon pervade and dominate the whole machinery of communication. (Heidegger, 1971: 165)

It is this that is the *ontological* aspect of the Heideggerian suspicion of technology. If the political aspect is a fear that our technology operates in such a fashion as to render us incapable of genuine political agency, it is itself premised upon the fear that, in knowing everything about the world, we have lost touch with the sense of our own mortality; the sense of our Being in the world. That is to say: if, as Allen argues, our technology is itself an articulation of our knowledge, being the physical proof of that knowledge, it is no surprise that it is via the ubiquity of technology (*viz.*, the world picture) that we find the world epistemically satisfying. The world is reduced to a field of data that is readily parseable and transmittable by our technological prostheses and apparatuses; a field of data that allows us to make predictions about future phenomena, as well as allowing us to more ably describe the physical qualities of the objects that surround us. However, despite being epistemically satisfying, the world is rendered ontologically problematic: with the world understood as raw physical data, there is no longer the potential for mystery, nor for world-changing revelations or epiphanies. We feel that the world is “dehumanised”, per the Jung quote with which we commenced this chapter. Although we have a plethora of data and are flush with facts, our place within that world is now uncertain. We experience a case of phenomenological unease that the world is meaningless; we suffer even more keenly our ontological lack (Stiegler, 1998: 190).

Curiously, this body of philosophy argues that the more we know about the world, the less we feel that we belong to it; as Stiegler observes, the more that we technologise our environment to alleviate the pain of our mortality, the more we become aware that we are, in fact, merely mortal. Our responses are those that we have articulated in this chapter: confusion, unease, scepticism. We may know everything there is to know about the things-in-themselves, but—given that we have lost a sense of their Being, and concomitantly lost the sense of our own—it is unclear that we still believe in them. Allen may be correct in arguing that such an approach is an error-laden exercise in magical thinking, but the sentiment is impossible to ignore: there is a clear sense that this is the danger inherent to technology; that it engenders a kind of inescapable phenomenological nihilism as we confront a world without meaning.

4

OPENING THE MECHANICAL TURK

To photograph is to appropriate the thing photographed. It means putting oneself into a certain relation to the world that feels like knowledge—and, therefore, like power. A now notorious first fall into alienation, habituating people to abstract the world into printed words, is supposed to have engendered that surplus of Faustian energy and psychic damage needed to build modern, inorganic societies. But print seems a less treacherous form of leaching out the world [...] than photographic images, which now provide most of the knowledge people have about the look of the past and the reach of the present. What is written about a person or an event is frankly an interpretation, as are handmade visual statements, like paintings and drawings. Photographed images do not seem to be statements about the world so much as pieces of it, miniatures of reality that anyone can make or acquire. (Sontag, 2008: 4)

4.1 *Dark Chambers & Chess Players*

In the autumn years of the 18th century, a German-speaking Hungarian inventor by the unlikely name of Johann Wolfgang Ritter von Kempelen de Pázmánd presented his latest creation to Maria Theresa of Austria, last Empress of the Hapsburg dominions. The article itself was a curious thing: a large, cumbersome object that Kempelen called the *Schachtürke*, or “chess Turk”. The bulk of the artefacts consisted of a large wooden cabinet approximately 110 cm long, 60 cm wide and 75 cm high, in the front of which was set three doors, a drawer, and an opening through which one could see an intimidating arrangement of cogs and gears. Behind this cabinet sat a rather tacky life-sized model of the head and torso of a swarthy, bearded, grey-eyed male dressed in furred robes and a large turban, armed with a long Turkish smoking pipe: the “traditional costume of an oriental sorcerer”—an aesthetic that was at that time fashionable with the Viennese glitterati (Standage, 2002: 22-23). In addition, and most importantly, on top of this cabinet, rendered in ivory, was a large 50 cm x 50 cm chessboard on which could be placed a red and ivory chess set, obtained from the drawer set into the front.

Making its debut at Schönbrunn Palace in 1770, Kempelen began his show by demonstrating the interior of the machine. Opening up each of the three doors set into the front, Kempelen would allow the audience to inspect the machine and admire the ornate network of clockwork that filled the cabinet.

In doing so he would also open up panels set into the back of the machine, in order that the audience be able to see *through* the apparatus, and thus allay any suspicions of foul play from cynical observers. All of this was an effort on Kempelen's part to convince the audience that the machine in front of them was a true automaton: no mere puppet, but a reasoning agglomerate of cogs, chains and gears. This display having been conducted, Kempelen then announced that the machine was ready for a challenger (Standage, 2002: 24-27). The first person to play the Turk was the Austrian diplomat Count Ludwig von Cobenzl, who was quickly defeated by the aggressively playing Turk—the first of a number of other challengers that day (Standage, 2002: 30).

These victories proved the beginning of an highly successful chess career for the mysterious automaton, though Kempelen himself only begrudgingly maintained the apparatus due to his interest in other projects; indeed, he was wont to refer to his invention as a “mere bagatelle”, and dismantled it following a match with Scottish diplomat Sir Robert Murray Keith in 1780 (Standage, 2002: 36-38). However this was to be short-lived: in 1781, Kempelen was ordered by Joseph II, Holy Roman Emperor and son of Maria Therese of Austria, to reassemble the device and present it at his court in Vienna. Reluctantly agreeing to the terms, Kempelen was dismayed when Joseph II advised him to take the Turk upon a tour of the Continent—a recommendation he clearly did not feel in his best interests to ignore. So began a tour of Europe that lasted over a decade: Versailles, Paris (where the Turk defeated Benjamin Franklin), London, Leipzig, Dresden, Amsterdam, Potsdam (maybe), before finally the automaton was retired to the Schönbrunn Palace until Kempelen's death in 1804—whereupon it was sold off, defeated Napoleon Bonaparte and shipped to America and expiring in a fire at Philadelphia's Chinese Museum in July 1854. According to the then-owner, Dr John Kearsley Mitchell, present at the fire, he heard “through the struggling flames [...] the last words of our departed friend, the sternly whispered, oft repeated syllables, ‘ehec! ehec!’”—French for “check, check!” (quoted in Levitt, 2000).

A fine trick, and an even finer story—one can easily imagine the haunting last moments of the automaton, jerked into sentience at last, bemoaning its lack of agency as it is finally and utterly consumed by flames. Except, of course, that the automaton was in fact no automaton at all, but rather an elaborate puppet manned by a series of diminutive chess prodigies—known in the literature on the device as its “operators”. Thanks to a magnetic board, a sliding seat and a particularly cunning series of pistons and levers, the operator was able not only to control the movements of the Turk's arm, but also keep out of sight in the event that Kempelen or any of the Turk's subsequent owners wished to show off the interior of the machine. Although the artefact appeared to be both intelligent and intelligible—“[one] old lady, in particular, who had not forgotten the tales she had been told in her youth [...] went and hid herself in a window seat, as distant as she could from the *evil spirit*, which she firmly believed possessed the machine” (Karl Gottlieb

von Windisch, quoted in Levitt, 2000)—its purported agency was in reality nothing but a masquerade, an illusion promulgated by the Turk’s owner and the small gentlemen who took up residence in its belly.

So what of the photographic image, one might reasonably ask, and what has that to do with a racially insensitive chess-playing automaton? What has this to do with the intuitions of which I spoke in the first chapter—the idea that photographs have some kind of epistemic weight (either truth- or world-bearing) by virtue of the closeness with which they cleave to the world? As I noted, it seems natural to make these sorts of claims: when we see events unfold on CCTV, we want to say that we know that they occurred by virtue of the fact that they were captured. When a private eye shows a cuckolded husband photographic evidence of his wife’s infidelity, it seems natural to say that we now *know* that infidelity has taken place. This is a powerful intuition, and seems to make a certain sort of sense given our implicit assumptions about the indexical relationship between photographs and the world. However, the intuition also seems *prima facie* incompatible with Allen’s performative epistemology for which I argued in CHAPTER 2; unlike the making of a table—an action which requires a kind of specialised, intentional performance—the taking of a photograph requires no such specialised knowledge. The taking of a photograph need not require any technical ability or coherent understanding of the relevant parts on the part of the photographer. Unless one is a specialist or a technician, the camera is a kind of black box: although we provide the inputs (framing the image, pressing the button) and can predict the outputs (an image of that which has been framed), using an operationally simple camera in the right way requires no special abilities or powerful insight; it is an easy example of what Allen would call “mere habit”. However, it occurs to me that at least in some respects the camera is rather like the Mechanical Turk. This might seem an odd observation to make, but I do not believe the differences to be superficial. The camera, like the Turk, is a device for which its power seems contingent upon the degree to which it is independent of human agency: the Turk is amazing because it appears to think under its own power; the camera appears to do the same when it captures the world. However, I argue, appearances are misleading in both cases: just as the Turk is in fact inhabited by a diminutive chess prodigy, so too is the creation of the photographic image far more contingent upon intention and circumstance than much current scholarship in analytic philosophy of film and photography appears to suggest.

So: it seems true that we afford a certain kind of epistemic privilege to the photographic image; we automatically expect the contents of the image to be in some sense the case. This is a well-documented phenomenon; psychologists have long been aware of the collective propensity to privilege images over text, a bias dubbed the “picture superiority effect”. Although the exact mechanisms of this bias are uncertain, it is “well known that pictures are typically remembered better than words”; human beings are more inclined to experientially remember events or individual objects if said they

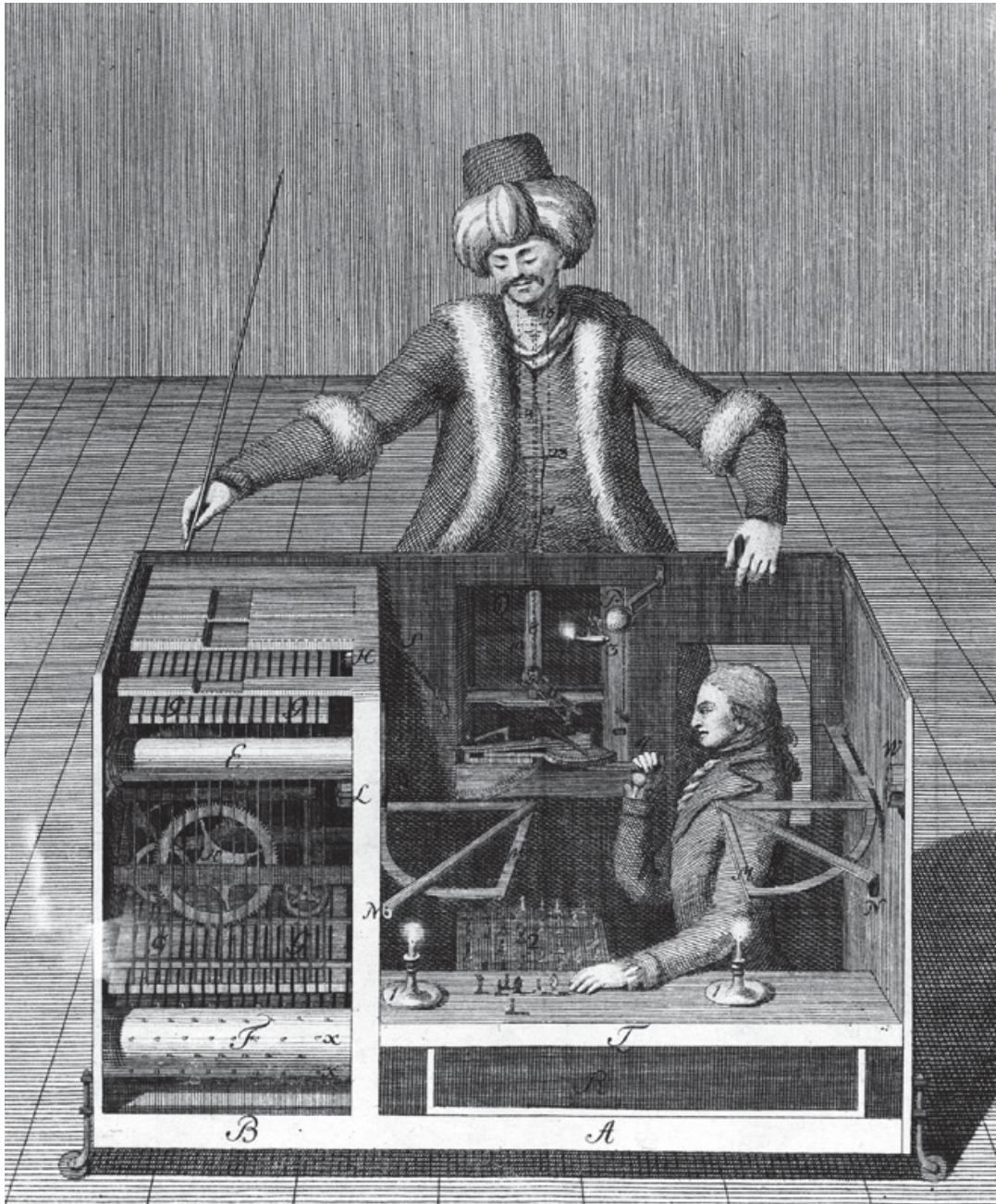


Figure 10: “The Turk,” engraving in *Ueber den schachspieler des herrn von Kempelen und dessen nachbildung*, Racknitz, 1789

are presented pictorially instead of verbally (Curran and Doyle, 2011). We might legitimately argue that the particular power that photographs wield is a radicalisation of this bias, premised upon their ostensive closeness with the world.¹

For his part, Ihde has proposed that, whatever cognitive biases are at play, it is the development of what he calls “visualism” within scientific practice that has served to bolster the assumptions of propositional accounts of knowledge. As he notes in 2002’s *Bodies in Technology*, there has been a collapse of scientific knowledge into the domain of the visual; a “cultural habit [that] has been accelerated in late modernity through the sophisticated development of imaging technologies, which now transforms ranges of phenomena that include, but also exceed, all human perceptual capacities and *translate* these phenomena into visual form” (Ihde, 2002: 37).² Ihde identifies a clear cultural bias privileging images over information contained in other kinds of sense data; although this bias is less evident in “softer” sciences (palaeontology, for instance), in physics and astronomy—the sciences that are “favoured” (Ihde, 2002: 57) by virtue of the fact that they have taken “dominant place in the interests of philosophers of science” (Ihde, 2002: 54)—the visual has been prioritised because imaging technologies easily afford us access to information which would otherwise be beyond our grasp (as in the cases of telescoping, spectrography, infrared technology, microscopy, false colour rendering, etcetera). Whereas earlier scientific praxis gave greater emphasis to what he calls the “plenary gestalt” of sense data: “descriptive anatomy at the time [c. 1500] was often in tactile and olfactory terms that referred to how an organ felt (hard, soft, pliant, etc.) or smelled (putrid, metallic, etc.)” (Ihde, 2002: 41-42), it was, Ihde claims, with the telescopes of Galileo and Leonardo da Vinci’s anatomical drawings that scientific knowledge began to take upon its contemporary visualist character.³

Ihde is, as you might expect, critical of this kind of thoughtless visualism, identifying this perceptual bias with what Husserl in “Origin of Geometry” called the forgetfulness of science—a kind of dispositional tendency against the whole-body perception of the plenary gestalt; this forgetfulness led Husserl to claim that “the primary and plenary perception of the life-world was far from the abstractness of science” (Ihde, 2002: 54). However, Ihde claims, this “abstractness” was not solely relegated to the realm of scientific inquiry during the Renaissance, but was rather a product of a broader

1 For further information, please see Nelson, Reed, and Walling, 1976; Paivio, 1986; McBride and Doshier, 2002; Hamilton and Geraci, 2006; Mintzer and Snodgrass, 1999. Please note that this is but a small selection of the literature on the subject, but it may be of use.

2 Cf.: the image of the steam train made by infrared camera in CHAPTER 2.

3 “Long before Vesalius developed his explicit anatomy, da Vinci had already taken the task of analytically and descriptively showing interiors of the human body in visual form. His exploded diagram drawings of a fetus, musculature and internal organs, etc., all anticipated later scientific anatomies. Leonardo’s engineering vision of the three-dimensional exploded diagram, still strikingly modern, was a universal vision for human and applied equally to corpses and machines. His imaginative (and usually unworkable) technologies of pumps, flying machines, and war machines were, like the fetuses and muscles, stylistically the same as analytical-Euclidian exploded diagrams” (Ihde, 2002: 55).

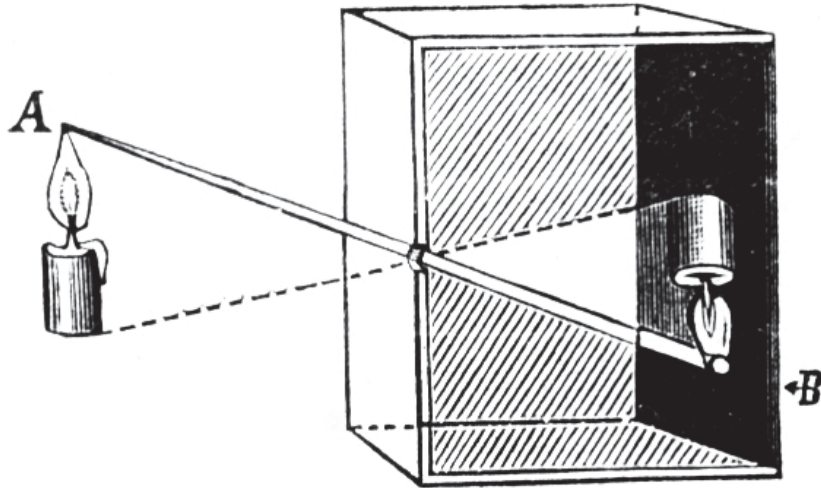


Figure 11: Diagram of a camera obscura

“Renaissance celebration of the visual” (Ihde, 2002: 54)—a celebration not restricted to the sciences of physics and astronomy, but also being very much present in the magisteria of art and philosophy, as exemplified in the technology of the camera obscura.

When the images of illuminated bodies pass through a small round hole into a very dark room, if you receive them on a piece of white paper placed vertically in the room at some distance from the aperture, you will see on the paper on those bodies in their natural shapes and colors, but they will appear upside down and smaller. [...] The same happens inside the pupil of the eye. (Leonardo da Vinci, quoted in Ihde, 2002: 72)

The camera obscura proved a powerful epistemic metaphor for artists, philosophers and scientists during the Renaissance, with received wisdom suggesting that the artefacts readily struck early thinkers with the unmistakable similarities between the camera obscura and the human eye, and that both medieval Islamic and Christian philosophers and natural scientists came to similar conclusions on the subject (Wade and Finger, 2001: 1159, Ihde, 2000: 21, Ihde, 2002: 71-75 and Ihde and Selinger, 2004: 365).⁴ “Rediscovered” by Leon Battista Alberti in 1450 to produce “wonderful pictures of great verisimilitude” (cited in Ihde, 2002: 71), the camera obscura, unlike the practice of, say, painting from a live model, means that one of the “two matrices for subjectivity” (Ihde, 2002: 43) has been surpassed. Whereas accurate depictions of a subject—say, da Vinci’s anatomical drawings—were

⁴ Of course, the camera obscura massively predates the development of scientific visualism, with the earliest surviving mention of pinhole cameras being in the work of the 5th century BCE Chinese philosopher Mozi (Oullette, 2005: 52), as well as textual evidence that the Greeks were in possession of the technology by the 4th century BCE (Campbell, 2005: 114), per the *Problemata* of Pseudo-Aristotle.

previously contingent upon not only a kind of skilled reproduction (the act of drawing, painting, sculpting, whatever), but also a kind of skilled *seeing*, the ability to see objects as they *are* in order to reproduce them (a *p+*, or superlative artifactual performance, in the Allenian sense). However, artefacts like the camera obscura—and I include technologies like telescopes and microscopes in this category—being an hermeneutic technology per the Ihdean schematic outlined in CHAPTER 3.3, removed this requirement for skilled seeing. Instead, we discover a kind of seeing that reduces the viewed object to an isomorphic and fixed image that can be more readily recorded; the world projected on tracing paper. Accordingly, in the camera obscura we find the birth of a kind of visualist automatism; a kind of image creation not subject—or at least less subject—to the performative vagaries of human action.

It is for this reason that Ihde claims that the camera obscura had what he calls a “paradigmatic role” in early modernity (Ihde, 2002: 71), particularly as it served to inform the epistemic positions of two of early modern philosophy’s leading lights: René Descartes and John Locke. Descartes, in *La Dioptrique* (and echoing da Vinci), writes that the camera obscura is in fact a perfect analogue for the human eye, with “the room [representing] the eye, the hole the pupil; the lens, the crystalline humor—or rather, all the refracting parts of the eye; and the cloth, the lining membrane, composed of the optic nerve-endings” (Descartes in Ihde, 2002: 72). This, as Lee Bailey points out, is the beginning of a specific epistemic disposition, characteristic of early modern epistemology, that assumes that the camera/eye is the point of contact between the *res cogitans* (“mental substance”) that constitutes internal processes and the *res extensa* (“corporeal substance”) that constitutes the material world: “The *camera obscura* began as an experimental model for the eye and became a ruling metaphor for the mind. [... The] image of skull’s darkroom shifted from a suggestive experimental analogy to a *concealed methodological paradigm*” (Bailey, 1989: 64, emphasis mine). It is in this shift to what Daniel Dennett derisively called the “Cartesian Theater” (Dennett, 1991: 107), replete with the dualist distinction between observing subject and bodily vessel, that we find the origins of an epistemic model that allows for no *direct* access to the world, but rather only a representational access by way of the images delivered via the seeing apparatus. Thus the beginnings of the Cartesian program: in claiming that our understanding of the world outside of our senses is only ever via the hollow and unreliable impressions of our sense data, he comes to the unpalatable conclusion that engenders his position of maximal doubt.

In Locke this epistemic disposition is if anything even more explicit, arguing that our eyes and perceptual faculties are meaningfully like “the windows by which light is let into this dark room: for methinks the understanding is not much unlike a closet shut from light, with only some little opening left, to let in external visible resemblances, or ideas of things without [... these] resemble the understanding of a man, in refer to all the objects of sight and the ideas of them” (Locke, 1976 in Ihde and Selinger, 2004: 365).

Our minds—the *tabulae rasae*—are meaningfully like the white sheet of the camera obscura: a white screen upon which representations of the world are cast. Meanwhile, the modern subject, like a person trapped inside a cinema, can only be aware of the external world by virtue of the images cast upon the white screen by the camera obscura of our senses: “Herein lies the ‘invention’ of the modern subject or cogito” (Ihde, 2002: 73). Direct access to the world is a mere conceit; all we can ever know is the image.

Here we have the birth of early modern epistemology: “reality” is “external”, knowledge is “represented” and “internal”, and “objective truth” has to be a “correspondence” between the object and its representation. But with this model of knowledge comes the problem of the inner homunculus or “subject”, the self trapped inside the camera, and the need for an ideal observer who sees both what goes on inside and outside at the same time and is thus able to tell whether the object and its representation correspond. Such is the epistemology produced by the engine of the camera obscura. (Ihde, 2000: 21)

These assumptions, Ihde argues, have indelibly shaped the form of Western epistemology by virtue of the fact that the camera obscura is the superlative example of something that he calls an “epistemology engine”—that is, a technology that provides a model for knowledge creation. That is to say, Ihde argues that the camera obscura provides a measure by which we can talk about the creation of knowledge in a general sense: as the camera obscura is analogous with the eye (per da Vinci, Descartes, Locke), so too is the process by which the image is rendered understood as a kind of analogue of the subjective ego. Moreover, although one could argue that all technological artefacts are epistemology engines of a kind in that certain kinds of scientific knowledge would not become clear without the aid of a concomitant artefact (in the case of the steam engine, it was entropy and the second law of thermodynamics),⁵ artefacts such as the steam engine are but imperfect or incomplete epistemology engines, for they only have epistemic ramifications within a given set of quite narrow boundary conditions. Meanwhile, the camera obscura serves as the epistemology engine *par excellence*, because unlike those other examples it provides fodder for more comprehensive and general epistemic models.

As the epistemology engine of choice, the camera obscura appeals to us because of its purported accuracy. It, like the human eye, can capture something of the world in an important way, but it does so without the risk of distorting any informational content due to the presence of a prevailing ego: unlike a human being, the camera obscura cannot get upset; it cannot miss things out of tiredness or carelessness; it cannot suffer perceptual impairment due to drugs or alcohol. If the eye is assumed to the

⁵ “[T]he genesis of conceptual ideas from praxis [...]. [Praxis], far from being inherently antithetical to theory, is capable of inspiring the shape that theoretical concepts will come to assume” (Ihde and Selinger, 2004: 363)

knowledge-producing because it captures the world, then the camera obscura is maximally knowledge-producing, by virtue of providing us with ostensibly impersonal, *accurate* raw data from which we are able to render knowledge claims—data, moreover, that need not be filtered through our unreliable perceptual and cognitive apparatuses. It is supposedly not only capable of seeing, but a kind of *ideal seeing*—a seeing that, mutely and without judgement, accurately captures the facts.

The sensitive photographic film is the true retina of the scientist [...] for it possesses all the properties which Science could want: it faithfully preserves the images which depict themselves upon it, and it reproduces and multiplies them indefinitely upon request; in the radiative spectrum it covers a range more than double that which the eye can perceive and soon perhaps will cover it all finally, it takes advantage of that admirable property which allows the accumulation of events, and whereas our retina erase all impressions more than a tenth of a second old, the photographic retina preserves them and accumulates them over a practically limitless time. (P. J. C. Janssen, 1888, in Ihde, 2002: 44)

However, is it appropriate for us to accept these claims uncritically? Certainly, Ihde is dubious of these sentiments, though his rejoinder strikes me as a touch glib: he would like to know where this epistemic subject, this *cogito*, makes its home. Finding no suitable candidate, he simply appeals to his Merleau-Pontian intuitions: “Truth does not ‘inhabit the inner man,’ or, more accurately, there is no inner man, man is in the world, and only in the world does he know himself” (Merleau-Ponty, 2002, in Ihde, 2002: 74). However, despite his suspicions, he does not actively interrogate the extent to which photographs are or are not truth- or world-bearing; although it may be appropriate to reject a “camera obscura epistemology” for whatever reasons, it is not appropriate to accept the “truth-bearingness” or “world-bearingness” of photographs. Although I too have sympathies in a Merleau-Pontian direction, I do not think Ihde’s invocation of Merleau-Ponty is a sufficient disavowal of this position; as I will demonstrate in the following sections, not only should we reject the assumption that photographs are knowledge-producing or naïvely world-bearing on phenomenological grounds, we should also do so on epistemic and ontological grounds. As we established in CHAPTER 2.4, assuming too much of the relationship between our artefacts and the world is extremely problematic: rather than being logically supervenient upon the world they are in fact *naturally* supervenient; being trapped in an asymmetrical relationship, the forms of our artefacts are not dictated by the base conditions, but instead require some additional facts to account for them being the case—in this instance, meaningful, intentional human agency.

So how to begin interrogating these visualist assumptions of photographic technology? It seems prudent to begin at the beginning, at least insofar as

these sentiments made themselves known in analytic philosophy of photography. Although I have clear reservations about the accuracy of these position, it nonetheless behoves us to examine them in order to see not only where the error lies, but also to ascertain what content may be repurposed.

4.2 *Looking Through a Glass, Darkly*

The sentiment that photographs are representative of or otherwise examples of a kind of automated, more true, seeing percolated, via Cavell's 1971 *The World Viewed*, into the earliest pieces of literature within analytic philosophy of photography: "We might say: A painting *is* a world; a photograph *is of* the world" (Cavell, 1979: 24). Immediately apparent, even in this first, gentle attempt to usher photography and cinema into the purview of analytic philosophy, we find an obvious concern with the presumed relationship between a photograph and its subject: "So far as photography satisfied a wish, it satisfied [...] the human wish, intensifying since the Reformation, to escape subjectivity and metaphysical isolation—a wish for the power to reach this world, having for so long tried, at last hopelessly, to manifest fidelity to another" (Cavell, 1979: 21). As Joel Snyder and Neil Walsh Allen, quoting Arnheim, note: photographs suffer from the "same deficiencies that 'physical reality' or 'the world' itself does", in that photographs—like the world—lack the "'formal precision' and 'expressive freedom' which the 'private visions' of the painter possess" (Snyder and Allen, 1975: 147). The photograph is deficient because it is tied to the world in a way that paintings are not; the content of a photograph is contingent upon the world being a certain way, having been captured by a process that is beyond our direct mediation.

The intuition seems clear: that, due to the means by which photographic images are produced, the photographic image is far closer to the world than the products of other arts; by virtue of the *automatism* inherent in photographic production, we are ostensibly able to remove "the human agent from the act of reproduction" (Cavell, 1979: 23). The photograph is seemingly understood as an ahistorical artefact that somehow captures an aspect of the world; it has "an authenticity from which painting is barred from birth", allowing us to take "a vacation from artifice" (Arnheim, 1974: 154, 157).⁶ Although this may seem a naïve view—indeed, though the facts of the matter are likely otherwise—this question of automatism and production has framed much of the subsequent literature in analytic philosophy of photography. Accordingly, this section is my attempt to explore some of the

⁶ Thus Bazin's statement to the effect in "The Ontology of the Photographic Image": "No matter how skillful the painter, his work was always in fee to an inescapable subjectivity. The fact that a human hand intervened cast a shadow of doubt over the image. Again, the essential factor in the transition from the baroque to photography is not the perfecting of a physical process [...]; rather does it lie in a psychological fact, to wit, in completely satisfying our appetite for illusion by a mechanical reproduction in the making of which man plays no part" (Bazin and Gray, 1960: 7).

intuitions that photographs, per Bazin, have a privileged relationship with the world:

The aesthetic properties of photography are to be sought in its power to lay bare the realities. [...] Only the impassive lens, stripping its object of all those ways of seeing it, those piled-up preconceptions, that spiritual dust and grime with which my eyes have covered it, are able to present it in all its virginal purity to my attention and consequently to my love. (Bazin and Gray, 1960: 8)

Roger Scruton, in his “Photography and Representation”, makes his antipathy to photography quite clear from the outset. Although one might imagine that this argument stems from a sense of moral outrage—perhaps an assumption that photography, being something of a parvenu compared to more traditional visual media such painting, sculpture or theatre, has no business positioning itself amongst the creative canon—Scruton’s argument is less axiological than it is categorical: due to the conditions under which photographs are made, he argues that they are inherently precluded from consideration as examples of an art form. Although this might sound perverse—after all, it is common practice to refer to photography as being capable of consideration as “fine art”, just as photography finds itself no longer confined to the purgatory of specialist galleries (Costello and Iverson, 2012: 679)—his argument rests upon an analysis of representation and intention in photography contra the more traditional arts.

It seems natural to say that a painting is an intentional product—referring back to CHAPTER 2.1, regardless of whether the activity of painting is undertaken in the spirit of the workmanship of certainty or the workmanship of risk, there is a clear intentional relationship between the person holding the brush and the canvas sitting on the easel; an embodiment relation with the enigma position planted between the person and the brush which, per Ihde’s schema in CHAPTER 3.3, may be rendered:

(I-brush) → painting

It also seems natural to claim that there is a second intentional relationship in which the first relation is nested, describing the relationship between the ego, the painting and the subject of the painting, in that the subject of the painting bears relevantly upon its contents in some capacity:

(I-painting) → subject

The first mediated relationship, you will notice, has been collapsed into the enigma position in my second formulation, thus describing more broadly the opaque relationship between self and artwork in art practice. You will also notice that this broader description poses a new embodiment relation between the “I-painting” (that is to say, the *representation*), and the “subject” (that which is being *represented*). Although a painting is a representation in

that it is *of* something, “it does not follow that the subject exists nor, if it does exist, that the painting represents the subject as it is” (Scruton, 1981: 579). There is a clear intentional relationship between the “I-painting” and the subject in that the “I-painting” unit chooses the means of representation; in order to accurately describe or characterise the relation between a painting and its subject, Scruton argues that a clear picture of artistic intention is necessary in order to do so accurately. Furthermore, the realisation of said intention is contingent upon the painting being the product of the right kind of artefactual performance (per Allen in CHAPTER 2) in that it has, at the very least, satisfied the relevant success conditions (k_p): “successful realization of [...] intention lies in the creation of an appearance, an appearance which in some way leads the spectator to recognize the subject” (Scruton, 1981: 579). Accordingly, we may unpack the nested relationship:

[(I-brush) → painting] → subject

However, so Scruton argues, this intentional relationship does not hold in the case of photography: “The ideal photograph also stands in a certain relation to a subject: a photograph is *of* something. But the relationship is here causal and not intentional” (Scruton, 1981: 579). That is to say, whereas a painting is of a subject, that subject (say, a unicorn) need not exist—or, conversely, even if the subject *does* exist, it may represent it in a manner that fulfils few veridicality requirements—the contents of a photograph are entirely more restricted. If someone takes a photograph, x , of me, just by looking at the photograph one is able to say that there exists a particular man, Ryan Wittingslow, of whom x is the photograph. Although there is, at least in most cases, an intentional relationship between a person and a photograph—at least in the sense that a person is casually responsible for its creation, per the embodiment relationship denoted below—there is no such intentional relationship between the contents of the photograph and its subject; instead, the relationship between the two, Scruton argues, is purely causal.

(I-camera) → photograph

Not being intentional, it is not a *representation* of the subject in that the outcome is not reliant upon the “(I-camera) → photograph” embodiment relation adequately observing the success criteria; indeed, the fact that the relationship is purportedly causal rather than intentional seems to preclude the possibility of “photograph—subject” being considered an embodiment relationship at all. In other words, although the actual act of taking a photograph is an embodiment relation—“(I-camera) → photograph”—the relationship between photograph and subject is better described as an hermeneutic relation with the photograph, like the infrared camera mentioned in CHAPTER 2, *reading* the world via an automatic process and then providing an ostensibly maximally veridical translation of the data.

I → (photograph-subject)

Moreover, if we are to expand this assessment to include the embodiment relation, we notice that there are *two* enigma positions instead of one. Due to the eerily close relationship between photograph and the subject it captures, we cannot nest the first relation within the second, as in the case of painting. Rather, the two enigma positions emerge simultaneously, each at either end of the technological relation:

(I-camera) → (photograph-subject)

Imagine that you are in possession of two images of a very close friend, one a photograph and the other a painting. It is due to the differing intentional relations that hold between painting and photograph production that Scruton believes it natural for me to say of the painting that you “see what it represents”, but that you “do not take it for what it represents” (Scruton, 1981: 580). You might observe that the painting is a rather good one, and that it captures your friend’s likeness in some important way: their smile, or their knock-kneed stature, or perhaps something more ineffable entirely. Or conversely, if the painting is a poor likeness, you might instead find yourself mistaking it for someone or something else entirely: your father, a small dog, a bag of cornstarch. In either case, Scruton argues, when you parse the contents of a painting, there are three objects of interest worth observing:

1. The intentional object: what you perceive the painting to represent, whether friend, father or cornstarch;
2. The represented object: your friend, as broadly dictated by artistic intention;
3. The material object: the painting itself.

However, Scruton argues, one does not undergo the same process when looking at the photograph of your friend. The photograph, being, as Ihde would describe, the product of some kind of hermeneutic relation, is not referenced in the same way. One does not say of a photograph that it is a “good representation” for it is not a representation at all. Instead, if someone were to come to you and inquire about the photograph in your possession, you would not say “This is a photograph of my friend”; instead, you would likely say something like, “This is my friend”. Unlike in the case of the painting, the process of production and the kind of relationship photographs are presumed to have with the world introduces a kind of terminological slippage. In comparison with your reaction to the painting, you actually (correctly or not) *take the photograph for what it represents*. The photo is, Scruton argues, *what is the case*: “It is recognized at once for what it is—not as an interpretation of reality but as a presentation of how something looked. In some sense looking at a photograph is a substitute for looking at the thing itself” (Scruton, 1981: 588).

The photograph for Scruton is then rendered, in some important and mysterious respect, a *transparent* technology. Despite our protestations to the

contrary, Scruton argues that photographs are precluded from the possibility of having an inherent content of their own, for they are entirely constituted by the image captured by automatism. He writes: “Of course I may take a photograph of a draped nude and call it *Venus*, but insofar as this can be understood as an exercise in fiction, it should not be thought of as a photographic representation of *Venus* but rather as the photograph of a representation of *Venus*” (Scruton, 1981: 588). The photograph is not intentional and can have no intentional content, even though the same is not true of that which is being photographed. A photograph *x* of a painting *y* in a certain aspect *z* is only important insofar as the image contains *y*, with *y* entirely constituting not only the intentional content, but also the degree to which a photograph is beautiful or ugly: “if one finds a photograph beautiful, it is because one finds something beautiful in its subject. A painting may be beautiful, on the other hand, even when it represents an ugly thing” (Scruton, 1981: 590). A film is no different, in Scruton’s eyes: the value of a film is only that inherent in the performances of the actors; a film is little more than a play filmed and projected in light (Scruton, 1981: 599). To exhibit aesthetic interest in a photograph, he argues, is to exhibit interest in its contents; our interest in a photograph or a film is entirely contingent upon what is presented to us.

Although his position on the art-status and aesthetics of photographs and films are well beyond the purview of this analysis, the ontological and epistemic ramifications of these claims are nonetheless of clear interest. Namely, if Scruton is correct in claiming that photography is a transparent technology without a clear concept of content, then it also seems natural to say that photographs are ontologically distinct from the world only in the sense that a photograph can only capture the world at a certain time, in a certain place; otherwise, the photograph is defined by its sense of *absence* due to its keen receptivity to the facts of the matter—i.e.: what is occurring in front of the camera lens. This intuition certainly seems to be what Cavell is invoking when, in *The World Viewed*, he writes that “photography is of the world”—unlike the richly textured Alice universes of painting and sculpture, a photograph is something like a very small window pointing to specific spatio-temporal coordinates somewhere on the broad map of existence; a “mirror with a memory” (Oliver Wendell Holmes in Scruton, 1981: 596). Moreover, in making this assumption that the photograph is transparent to that small window to the universe, we might also reasonably expect that, in having no content of its own, the photograph is of primarily epistemic value: being ostensibly true to the facts of the matter, photography allows us in some sense to see the world *as it is*, untainted by our perceptual contingencies.

This assumption, however, is incorrect. Despite the fact that Scruton appears ready to endorse some kind of thesis that photography is in a sense “truthful”, the fact that we are so easily fooled by the contents of photographs or films ostensibly precludes the possibility of that being the case. Paintings, sculptures, literature and the other representative arts are

of pedagogical or epistemic value by virtue of the fact that they do not merely gratify our venal fantasies; in order to understand them properly, we are forced into having the right kind of engagement lest our analyses of the aesthetic truths contained therein be compromised. Furthermore, Scruton argues that, even if we were able to ward off the seductive aspects of the indexical image, the photograph is itself an imperfect truth detector; although it may artlessly capture the world, it does so in a way wherein the output is necessarily distorted by virtue of the fact it is incomplete; it “remains inescapably wedded to the creation of illusions, to the creation of lifelike *semblances* of things in the world” (Scruton, 1981: 602). However, even though they are imperfect truth detectors, their presumed indexicality with the world—the fact that photographs and films present themselves as real—means that we consume them as if the illusions contained therein are indeed the fact of the matter; according to Scruton, we lack sufficient intellectual distance to judge photographs for what they are: inert and idiotic aspects of the real, containing only the merest illusion of substantive content.

[We] are lulled into an acceptance of their reality and persuaded to overlook all that is banal, grotesque and vulgar in the situations that they represent. The cinema has proved too persuasive at the level of mere realization and so has little motive to explore the seriousness of its subject. It is entirely beguiling in its immediacy, so that even serious critics of literature can be duped into thinking that a film like *Sunset Boulevard* expresses an aesthetic idea, instead of simply preying upon the stereotyped fantasies of its audience. [...Photography] therefore gratifies the fantasy of desire long before it has succeeded in understanding or expressing the fact of it. The medium of photography, one might say, is inherently pornographic. (Scruton, 1981: 602-603).

Uncharitable though this sentiment is, Scruton’s analysis is helpful because it prefigures much of the subsequent analytic literature regarding the ontology of the photographic image. It certainly seems to have been instrumental for Kendall Walton in his 1984 paper “Transparent Pictures”—Walton clearly inherits from Scruton the intuition that photographs exhibit a kind of transparency to the world. He begins his paper with André Bazin’s famous and much-misunderstood quote from “The Ontology of the Photographic Image”: “The photographic image is the thing in itself” (Bazin, quoted in Walton, 1984: 246). Although Walton clearly does not take Bazin at face value on this point—it would be absurd, he rightly claims, to think that a photograph of a thing is *literally* the thing being photographed—that a photograph of *x* is itself *x* (Walton, 1984: 249), he does endorse a related position. He claims that photographs are best understood as aids to vision in the same way that a mirror or a telescope is an aid to vision: periscopic mirrors can allow us to see things outside our embodied perceptual field, and

telescopes allow us to see things very far away. In this vein, photographs too allow for different ways of seeing; just as the technical apparatuses that constitute telescopes, microscopes and periscopes work in such a way as to allow us to exceed our physical limitations, cameras—by virtue of the mechanistic means by which they inscribe visual data—grant us a different kind of ability: a form of seeing through *time*. “With the assistance of the camera, we can see not only around corners and what is distant or small; we can also see into the past. We see long deceased ancestors when we look at dusty snapshots of them. [...] Photographs are *transparent*. We can see the world *through* them” (Walton, 1984: 251). It is worth quoting Walton at length on this point:

I must warn against watering down this suggestion, against taking it to be a colorful, or exaggerated, or not quite literal way of making a relatively mundane point. I am not saying that the person looking at the dusty photographs has the *impression* of seeing his ancestors—in fact, he doesn’t have the impression of seeing them “in the flesh,” with the unaided eye. I am not saying that photography *supplements* vision by helping us to discover things that we can’t discover by seeing. Painted portraits and linguistic reports also supplement vision in this way. Nor is my point that what we see—photographs—are *duplicates* or *doubles* or *reproductions* of objects, or *substitutes* or *surrogates* for them. My claim is that we *see*, quite literally, our dead relatives themselves when we look at photographs of them.

Does this constitute an extension of the ordinary English sense of the word “see”? I don’t know; the evidence is mixed. But if it is an extension, it is a very natural one. Our theory needs, in any case, a term which applies both to my “seeing” my great-grandfather when I look at his snapshot and to my seeing my father when he is in front of me. What is important is that we recognize a fundamental commonality between the two cases, a single natural kind to which both belong. We could say that I perceive my great-grandfather but do not see him, recognizing a mode of perception (“seeing-through-photographs”) distinct from vision—if the idea that I do perceive my great-grandfather is taken seriously. Or one might make the point in some other way. I prefer the bold formulation: the viewer of a photograph sees, literally, the scene that was photographed. (Walton, 1984: 251-252)

This has clear links with both Scruton’s and Bazin’s formulations of the photographic image. Although he wants to avoid collapsing the photograph with the thing of which it is an image, Walton seems quite happy to claim, like Scruton, that the *contents* of the photograph have an identity with the thing photographed. Although the photograph of your dead grandfather—that is, the physical object on which the image is inscribed—is not liter-

ally your grandfather, per Bazin's rather bizarre identity claim, you do literally *see* your grandfather when you examine the photograph *qua* image, as opposed to *qua* object. Indeed, in a nice reflection upon some of the (post-)Heideggerian material we covered in prior chapters, his argument in favour of this characterisation has a distinctly phenomenological flavour: just as we would probably not dispute that we literally *see* the objects in experience even when we are viewing them through spectacles, mirrors or a closed-circuit television, Walton thinks it is nonsensical to pose a category distinction simply because the photographic image has been inscribed upon a piece of paper or a silver screen: "To think of the camera as another tool of vision is to de-emphasise its role in producing pictures. Photographs are pictures, to be sure, but not ordinary ones. They are pictures through which we see the world" (Walton, 1984: 252). Of course, the mode of seeing may be mediated or indirect, but so too is it mediated or indirect when we look at live CCTV footage or through the lens of a periscope; it is still, Walton would have us believe, a kind of *seeing* (Walton, 1984: 253). In short, he replicates Scruton's assumptions about the phenomenological and technological relations that exist between the constituent parts:

(I-camera) → (photograph-subject)

However, Walton's analysis differs from Scruton's in one important respect: although he generally endorses Scruton's transparency thesis, he does not endorse the corollaries that Scruton argues emerge from that position, particularly those regarding the impossibility of photographic content. Whereas Scruton seems content to think that saying "That is a photograph of Venus" in response to a photograph of someone providing a representation of Venus is the product of some kind of cognitive error or a victim of terminological slippage, Walton attempts to draw a substantive distinction between what he calls "*really seeing*" versus "*fictionally seeing*". In the case of the photograph of the representation of Venus, Walton would describe the statement "That is a photograph of Venus" as being symptomatic of the *fictional* kind of seeing—the same kind of seeing that allows you to, upon seeing a photo of your friend *x*, say "That is *x*". What you *really see*, of course, is (as Scruton argues) the representation of Venus through the transparent technology of the photograph: "We have now uncovered a major source of the confusion which infects writings about photography and film: failure to recognize and distinguish clearly between the special kind of seeing which only fictionally takes place [...]. A vague awareness of both, stirred together in a witches' cauldron, could conceivably tempt one toward the absurdity that the viewer is really in the presence of the object" (Walton, 1984: 254).

Perhaps the best articulation of Walton's position is his analysis of Chuck Close's 1968 *Self-Portrait* (FIGURE 12). Here Walton makes the observation that if the power of photographs relied upon how they looked—that is to say, upon how well they observe and subsequently cleave to given veridicality requirements—then we would probably want to say that because a photo-realistic painting like *Self-Portrait* is equally as veridical as a photograph it

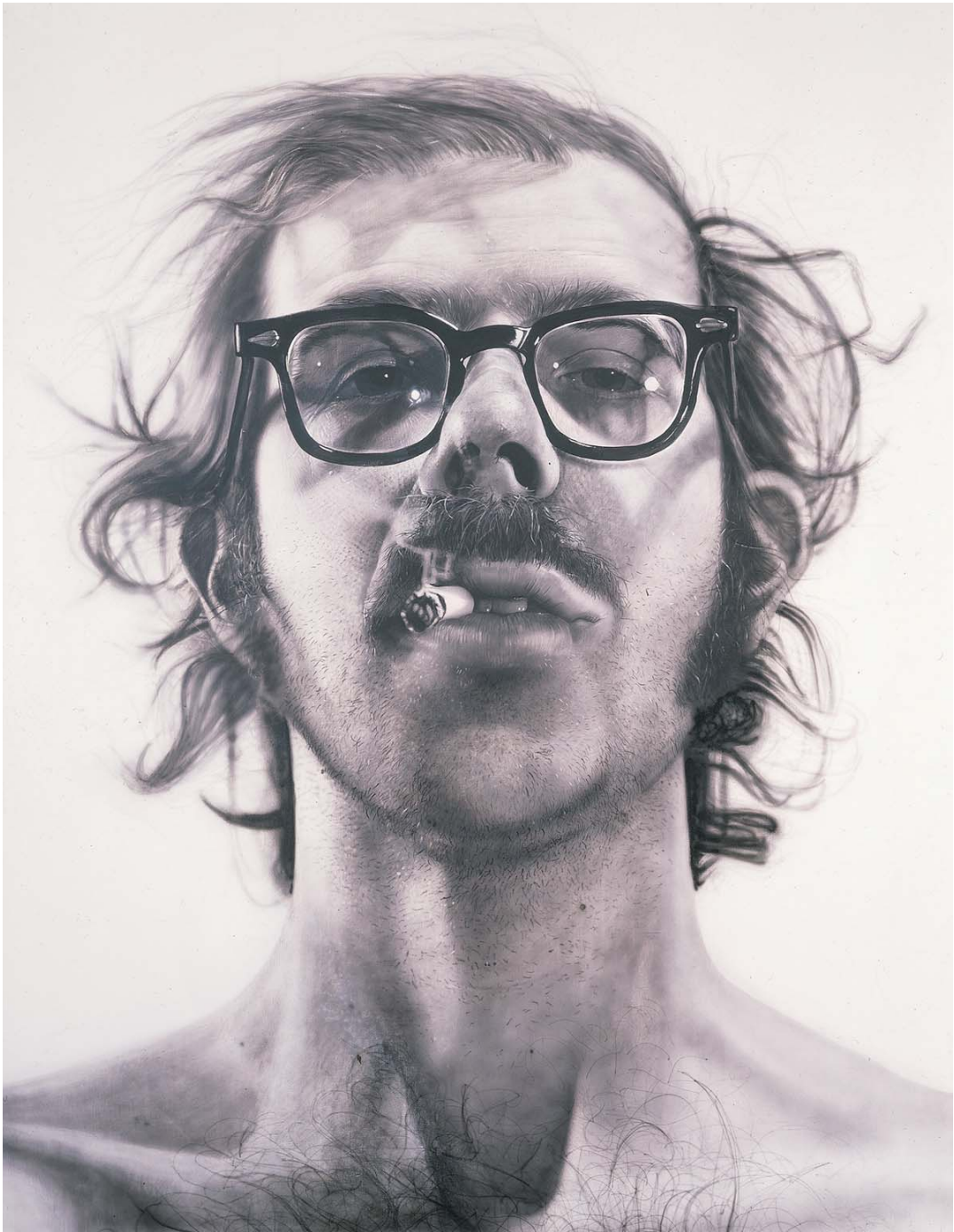


Figure 12: Chuck Close, *Self-Portrait*, acrylic on canvas, 1968

is also without content; a mere formal container for the thing that is being shown (in this case, Chuck Close). I believe Walton is correct here when he says that this is a clear misunderstanding of the state of affairs; rather than simply being more accurate things that are nonetheless of the same *type* as paintings, Walton argues that photographs are actually categorically distinct entities. Consider: cases like *Self-Portrait* discomfort and unsettle us because we at first presume that the image is a photograph, and it is not until we read the wall-text—"acrylic on canvas"—do we realise that it is not in fact the case. Although we may admire Close's artfulness, the uncanniness of the image presents a kind of ontological dissonance—like mistaking a stranger for a close friend, or stumbling into a department store mannequin and apologising for stepping on its toes. Walton writes: "The discovery jolts us. Our experience of the picture and our attitude toward it undergo a profound transformation, one which is much deeper and more significant than the change which occurs when we discover that what we first took to be an etching, for example, is actually a pen-and-ink drawing" (Walton, 1984: 255). The implication seems to be that a discovery of this type is an different *kind* of experience because the object itself is far more the image produced by a microscope than it is a painting. So, a problem emerges: photographic technologies need not produce veridically maximal images, yet they are to be considered of a kind with technologies that we traditionally consider to be veridically maximal: telescopes, microscopes, whatever. This seems *prima facie* problematic; it seems fair to think that a form of seeing should have a less inscrutable relationship with the world. It is uncertain how Scruton would respond to these claims, but Walton is unfazed: "But why should this matter? We can be deceived when we see things directly. If cameras can lie, so can our eyes. To see something through a distorting mirror is still to see it, even if we are misled about it. [...] The 'distortions' or 'inaccuracies' of photographs are no reason to deny that we see through them" (Walton, 1984: 258).

It is this point about the "inaccuracies" of photographs that should most attract our attention, for they force us to take note of a subtle but nonetheless important distinction for Walton: even though photographs, according to Walton, are *transparent* to the world, they do not necessarily provide *accurate* information about the world. They help us see the world in a certain way, but knowledge of the world is not concomitant with that seeing; it does not come along for free. The camera, while being a window to the world, can lie about the world in the same way that a funhouse mirror can lie about your height or fatness or grossly distorted features. Although counterfactually dependent upon the world in a way that paintings are not (*viz.*: the contents of a painting are contingent upon the beliefs and dispositions of the painter; photographs are not similarly contingent upon the beliefs and dispositions of the photographer [Walton, 1984; 264]), photographs are not *truth-bearing* artefacts. Walton writes: "If a person looks into a mirror and forms beliefs, on the basis of what he sees, about the things reflected in it and if those beliefs happen to be true, perhaps his beliefs do not constitute

knowledge. But this does not mean that he does not *see* the reflected things” (Walton, 1984: 259). That is to say: although you might derive a belief on the basis of having seen something via an imaging technology such as a photograph, any correct information that you can extrapolate—anything you might want to call “knowledge”—is only *incidentally* accurate, because the accuracy of the image itself can only be improperly ascertained.

Following the cues of H. P. Grice, Walton then argues that photographs express a form of *natural*, versus *nonnatural* meaning. Although the difference might seem initially unclear, Walton uses the distinction in order to better clarify the causal relationships that exist between things that mean *p* and things that are *p*. In the case of natural meaning, when we say that something naturally means (means_N) *p*, we would say that it entails *p*: it is *necessarily* connected with *p* in a way that is not contingent upon human action or some other chicanery. Dropping a glass and watching it explode into a thousand glittering shards means_N that something like gravity exists; my pot plant’s inability to flourish in my kitchen means_N that it is not receiving enough sunlight. Conversely, if something nonnaturally means (means_{NN}) *p*, it does not entail *p*; it is “connected instead with the notion of *someone’s* meaning *p* by it” (Walton, 1984: 266). If natural meaning is the world speaking to us, nonnatural meaning is only obtained by the correct reading of contingent symbolic intermediaries; unlike natural meaning, nonnatural meaning need only have a formal relationship with the facts. As Walton writes: “Spots mean_N measles, he says, and the ringing of the bell of a bus means_{NN} that the bus is full” (Walton, 1984: 265). Or, to situate the distinction with regards to the problem at hand: a photograph, by virtue of being transparent to the facts of the matter, means_N the facts of the matter; a painting, by virtue of being opaque to the facts of the matter, means_{NN} the facts of the matter.

For Walton, then, photographs are transparent but paintings are not. Moreover, he argues, this difference makes an epistemic difference—for example, it explains why the appearance of photographs, but not that of paintings, supports counterfactuals about the appearance of the depictum. In addition, it explains why we often treat photographs as evidence (both formal and informal), whereas we are resistant to treating paintings and drawings as such. (Cohen and Meskin, 2004: 198)

If one wishes to subscribe to Walton’s position here, it seems that, referring to our work earlier in this chapter, we could cautiously claim that the enigma position between photograph and subject—the Mechanical Turk—has been cracked open. There is an uncanniness to the relationship between photograph and world because the photograph necessarily means_N the world; the world being the way that it is means_N that the photograph takes the form that it does. If we recall our Ihdean modelling of the technological relations that exist in the act of taking a photograph—(I-camera) \rightarrow (photograph-subject)—we would probably say that the first enigma position, between self and camera, is straightforwardly Heideggerian, being a

kind of embodied phenomenological *Zuhandenheit* relation; the apparatus of the camera is subsumed into the phenomenology of the self by virtue of the fact that the camera works appropriately and serves to facilitate our ends. However, the enigma relation that holds between photograph and subject is clearly *not* phenomenological, for although the creation of the photograph itself is the product of human agency, the relationship it holds with the world—assuming we endorse Scruton and Walton—is not contingent upon our understanding of that relation. If it were contingent in this way, the photograph would nonnaturally mean the world; however, as we have established (or, at least, insofar as Walton understands it) the fact that it holds without our understanding indicates that the photograph naturally means the world. Accordingly, if we find ourselves willing to endorse Walton’s position, the enigma positions can be unpacked without substantial fuss.

(I—[*Zuhandenheit*]-camera) → (photograph—[means_N]-subject)

Furthermore, the act of looking at a photograph after the fact becomes even less complicated. If we claim that looking at a photograph of Venus is the same as looking at Venus by virtue of the fact that photographs mean_N the world, then we can depict the technological relation as unambiguously embodied—like the glasses perched on my nose, I see *through* them in order to look upon the world: (I-photograph) → subject.

Although there are serious problems with these assumptions—problems with which we will engage more robustly in the following chapter, it is worth finishing on a positive note: although Scruton’s and Walton’s arguments are really only of interest insofar as they have set the tenor of analytic philosophy of photography subsequent to 1981, a recent-ish paper by philosopher Gregory Currie has injected some much-needed new ideas into the debate—ideas, moreover, that will prove integral to isolating my position in subsequent chapters. I will offer a brief *précis* here.

The photograph, Currie argues, is an example of one of the two different kinds of representations: the *trace*, and that of the *testimony*. The distinction between them should be reasonably apparent, particularly given our exegesis of Walton’s claims in the prior section: the trace is literally a “trace” of the world, like a charcoal rubbing of a fossil, or the death mask of a French revolutionary. A trace is independent of belief, is entirely nondoxastic—the information the trace carries is independent of anyone’s belief that they might hold to the contrary: “These are traces left by things on the world. Anything about the person’s appearance that the footprint or death mask manages to record is belief independent in the way that the photograph is: what is recorded depends on the morphology of the foot or face; not on what someone thinks the morphology of the foot or face is” (Currie, 1999: 287). Conversely, Currie argues, a testimony is not a record of the facts of the matter, but is rather a record of what someone thought were the facts of the matter, much in the same way that Capote’s *In Cold Blood* is a record of

Capote's beliefs regarding the 1959 murder of Herbert Clutter, or that *Soft Construction with Boiled Beans* is a record of Dalí's feelings about the Spanish Civil War. A testimony, unlike the trace, is not *automated* or *automatic*; the form of the testimony is mediated by the intentions of the author in a way that the trace, Currie argues, clearly is not. Accordingly, so Currie argues, although they both carry *kinds* of information, they are not the *same* kinds of information (Currie, 1999: 286).

Although Currie does not invoke Grice explicitly—at least, not in the literature that I cover here—it is tempting to assume that the information carried by the trace has some kind of relationship with Grice's concept of natural meaning. What makes a photograph a trace of the world, for instance, might be that the contents of the photograph entail that a certain state of affairs is indeed the case. Additionally, it appears that we can also find a rough analogue between testimony and non-natural meaning—i.e.: that Picasso's portrait of Gertrude Stein only means Gertrude Stein because Picasso *intended* to paint Stein: an intention that was in turn realised only because certain things were the case (they occupied similar spatial coordinates, they had the right kind of relationship, Picasso had a sufficient level of skill, etcetera). However, as we shall see, it would be incautious to claim that they map onto one another perfectly.

[...] photographs somehow lie midway between the handmade image and the reality itself. That photographs are more able to affect us than handmade pictures is best explained in terms of the photograph's being a trace. Traces of things bear particularly direct relations to those things: things leave their traces on other things. Possessing a photograph, death mask, or footprint of someone seems to put me in a relation to that person that a handmade image never can. (Currie, 1999: 289).

What exactly does this mean? Currie is unclear on the subject, but the sentiment appears to bespeak a kind of quiet Platonism, as if photographs are but one tier on the scale of representation: we somehow *see* the contents of photographs, but perhaps not in the full plenary sense in which we would experience the photographed scenes directly. His Waltonian inheritance seems particularly obvious at these times, when he appears to be endorsing a kind of metaphysical or ontological difference between different kinds of representations, by virtue of the degree(s) to which they are transparent to the world. However, it is also here that we unearth his key point of *difference* with Walton. Walton would say, for example, that the differences between paintings, photographs and the world are apparent in the kinds of work that goes into *reading* the content of the image; that paintings and other testimonies non-naturally mean the world because we require additional information or some kind of supplementary story to explain the relationship between object and world, whereas neither photographs nor direct experience require any additional information.

Currie, however, does not think that photographs are literally windows to the world—he does not believe that they are modes and methods of *see-*

ing, despite seeming very much like it—though he does think that they are ontologically and epistemically distinct from products of the plastic arts, such as paintings. Walton, if we recall, asserts that the reason that photographs have a greater affective capacity than paintings is because they allows us to actually *see* what is being shot: “[Walton claims] we are more offended or disturbed by photographs and films because when we see them we are actually seeing the offensive or disturbing events themselves” (Currie, 1999: 289). Currie, however, disputes this fact. Although it is almost certainly true that we experience more powerful affective reactions from photographs than we do from paintings, per CHAPTER 4.1,⁷ Currie claims that the affective reaction we experience from photographs is nonetheless *less* than the affective reaction we would experience were we there when the photograph was taken—i.e.: experiencing the events *directly*. Instead, mediated by the automatism of the camera, we experience a kind of intermediate affective state, like neither the experiences of painting nor direct experience, induced by the fact that traces, unlike testimonies, are “left on the world by their subjects themselves” (Currie, 1999: 286). Moreover, he argues, the fact that photography affects us in a way that is like neither painting nor direct experience has quite distinct implications for the relationship between the photograph and the things-in-themselves; the experience of the trace, despite the trace having a nondoxastic and naturally meaning relationship with the world, differs in some important respect from the experience of the thing-in-itself. Accordingly:

<i>less real</i> → <i>more real</i>			
	PAINTING	PHOTOGRAPH	THING-IN-ITSELF
SCRUTON:	representation	presentation	
WALTON:	non-natural	natural	
CURRIE:	testimony	trace	—

These accounts all appear seemingly straightforward, but the straightforwardness of these accounts is, I think, deceptive. Although there is much of value I wish to address in this work—particularly Walton’s Gricean distinction between natural and nonnatural meaning, and Currie’s idea that traces are (or at least appear to be) a category unto themselves—I think it would be clarifying to look closer at the constituent parts of the photographic process, most notably the different roles and relationships that hold between photographer, camera, thing-in-itself, photograph and viewer. Accordingly, in the following section, I will attempt to offer a solution by taking care to speciate between the constitutive parts of the larger problem. In doing so, I will be referencing Allen’s material that we have already covered, as well as introducing some material briefly touched upon in the very first chapter: namely, how philosophy of action can help us speak intelligibly about the role that intention—and thus representational context—plays in the re-

⁷ Cf. prior discussion re the picture superiority effect.

alisation and subsequent understanding of photographs and other kinds of traces.

4.3 *Carving Photography at its Joints, 1*

How does one open this particular Mechanical Turk? We begin by isolating the moving parts that are minimally required: photographer, camera, thing-in-itself, photograph and viewer.⁸ These five parts may be identified and defined as follows (FIGURE 13):

1. The intentional agent, hitherto called the *photographer*. The photographer is the agent responsible for the trace in question. The intentions of the photographer may be summarised thus: that they intend to produce a *photograph* (item 4) of something that exists in the world—a *thing-in-itself* (item 3). In attempting to realise this intention, they act upon the camera, producing the *photographic event*—a concept I borrow from Dawn Phillips.
2. The automatism which captures the trace, hitherto called the *camera*. The camera is acted upon by the photographer (item 1), setting in motion a series of physical reactions whereby a photosensitive surface is exposed to light in such a way as to allow that surface to carry information from the light; it is in some sense subjected to the thing-in-itself, and is the locus of the photographic event.⁹ Phillips writes: “Light reaching the [surface] may be reflected off objects, emitted directly from light sources, or both. The light is usually directed through an aperture and by a series of lenses and mirrors” (Phillips, 2009: 337). This, we should be clear, is *not* the same as producing of a photograph (item 4); although the photograph may be “taken”, it has yet to undergo the process to become a visual image. Rather, the camera captures what Phillips calls a “light image”: “a changeable visible array of light of different wavelengths. [...] Properties of the light image, such as brightness and sharpness, are determined by the camera optics; a filter will allow only selected wavelengths to reach the screen. The size, shape, and pattern of the array is determined by optics according to whether a wide or narrow cone of light reaches the screen, but also by the camera position in relation to the objects

⁸ Although there can certainly be more than five such parts when talking about the creation and reception of photographs—particularly when one considers the myriad of both pre-production and post-production options available—I argue that only these five are both necessary and sufficient. Of course, one can also argue in favour of fewer moving parts—in the case of Dawn Phillips’ “Photography and Causation”, a paper that proved instrumental in helping me develop my views, she only argues for the existence of four such parts—but I am not convinced that a theory with any fewer constituents would be sufficiently finely grained for our purposes.

⁹ Although the processes that occur during the taking of a digital photograph is somewhat different, the causal relationship between camera and world nonetheless holds true.

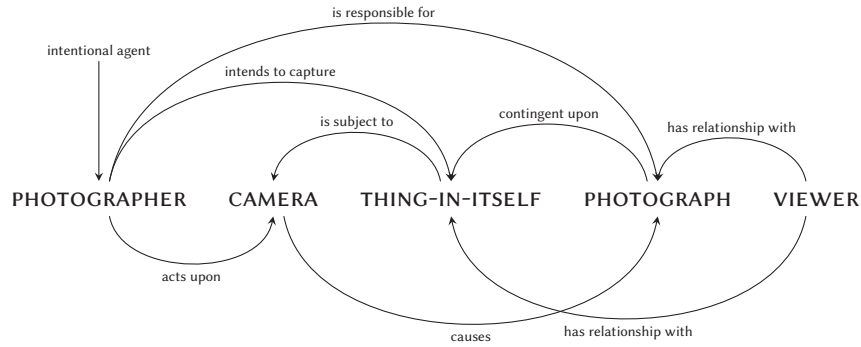


Figure 13: Photography’s moving parts

and light sources” (Phillips, 2009: 337). We will speak more about the relationship between automatism and the intentional agent shortly.

3. The ordinary facts of the matter, hitherto called the *thing-in-itself*. The light image rendered by the camera (item 2) is a product of the thing-in-itself by virtue of the information captured.
4. The image captured, hitherto called the *photograph*. The photograph is caused by the photographic event (item 2), being what is left of the light image after the photographer (item 1) has ensured that the light image has undergone the relevant processes to become a visual image of the thing-in-itself (item 3); the form that the photograph takes is in some sense contingent upon the facts of the matter. We will speak more about this relationship in the pages following.
5. The agent tasked with understanding or reading the photograph, hitherto called the *viewer*. Although we will engage with the viewer’s relationship with the photograph more completely in due time, at this point it seems adequate to say that the viewer sustains relationships with both the photograph (item 4) and the thing-in-itself (item 3), though the natures of these relationships are ostensibly ambiguous.

These categories clarified, we should note that I have picked out the more ambiguous relationships that hold between these five constituent parts; that is, between intentional agent and automatism, between photograph and world, and between agent and photograph. These relationships appear to be the loci for the conceptual confusions surrounding photographic practice. As I will make clear, although I believe that Walton and Currie, particularly, have substantive things to say about photographs, the fact that they have not sufficiently specified the moving parts compromises the depth of their insights. Accordingly, in atomising the photographic process thus, I hope to demonstrate just *where* and *how* their positions fit in with photographic practice, as well as allowing us to pose an answer to the question with which we began this chapter: to what extent, if any, is the photograph truth- or

world-bearing? We begin our analysis with the relationship between automatism and intentional agent.

It should be clear from the material that we have covered thus far that the idea of the “photographic agent” is one that has traditionally been given rather short shrift by philosophers of photography, particularly those of an analytic bent. The position, as summarised by Dominic McIver Lopes, can be rendered thus: “An item is a work of art only insofar as it is the product of agency, so a photograph is not an art work insofar as it is not the product of artistic agency” (Lopes, 2012: 855). Being the transparent product of an automatic process, it is not immediately clear where there is room for an intentional agent in the schema—which is why, at least according to Scruton’s view, it is not possible to capture objects in such a way as to betray the photographer’s style. Just as the photograph is not a representation, nor does the photographer intend the outcome of a photographic in any meaningful way.

For one thing, we lack all except the grossest features of style in photography; and yet it is style that persuades us that the question, Why this and not that? admits such fruitful exploration in the case of painting. Style enables us to answer that question by referring solely to aspects of the painting rather than to features which are aesthetically irrelevant, features which are in no way *manifest* in what is seen. The search for meaning in a photograph is therefore curtailed or thwarted: there is no point in an interest in detail since there is nothing that detail can show. Detail, like the photograph itself, is transparent to its subject. If the photograph is interesting, it is only because what it portrays is interesting and not because of the manner in which the portrayal is effected. (Scruton, 1981: 593)

Except, of course, that this is clearly not the case. Without the ability to discern between the works of different photographers, it would not be possible for “aficionados of photography [to] readily recognise an Arbus, a Weston, or a Levine” (Lopes, 2003: 436). When Susan Sontag writes that “Arbus photographs people in various degrees of unconscious or unaware relation to their pain, their ugliness. [. . . She] specialized in slow-motion private smashups, most of which had been going on since the subject’s birth” (Sontag, 2008: 36, see FIGURE 14), she is not simply writing with no clear referent, the criticism equivalent of candy floss and empty calories; instead, Sontag is touching upon the unique properties that render Arbus’ photography so immediately recognisable: her pearlescent dispassion, her distance, the sense that she is tirelessly and unsuccessfully trying to mar her own innocence. The fact that we can make these sorts of assessments and that, moreover, they are meaningful, seems to clearly demonstrate—indeed, painfully and obviously so—that photographs are, in one way or another, recognisably intentional products.¹⁰ But what exactly does this mean? Although Scruton

¹⁰ “While a painting or a prose description can never be other than a narrowly selective interpretation, a photograph can be treated as a narrowly selective transparency. But despite

has committed a grave error, the reasons for the mistake seem quite understandable: the camera is an automated entity upon which, at least ostensibly, intention has questionable bearing. We need unpack this problem further.

Now, it seems obviously true that photographs stand in some kind of automated, causal relationship with the things-in-themselves: the camera is activated, a series of events occur, a light image is produced, from which a photograph is produced. It also seems that, as Dominic McIver Lopes argues, that questions of photography, automatism and agency form what he calls a “mutually inflected triad”: if one value is overrepresented, one or two of the other values, as a corollary, will be underrepresented. That is to say (and I paraphrase Lopes here): if what makes photography distinct from the other arts is the fact that it is subject to automation, then taking advantage of that automaticity—that is, *submitting* to that automaticity—inherently curbs the influence of authorial agency. Agency is *given up* in exchange for automation (Lopes, 2012: 856), and subsequently there is an assumption that “photography, by its nature ([and] hence unlike painting), cashiers artistic agency” (Lopes, 2012: 857). And in a sense, of course, this is all true: the power of the photograph seems to lie in the fact that it has a closer relationship to the world than the other arts due to the automatism of the processes involved.

However, we must take stock of the fact that, when we speak of the intentional relationships that partially constitute the photographic process, there are actually two kinds of relations of which we must take account. The first, of course, is the relationship that holds between the intentional agent and the photograph: when I take a photo with, say, a vintage Polaroid instant camera, I do so with the goal of producing a kind of intentioned outcome: “I intend to create *t*”. However, there is also a *second* relationship—a relationship that exists in conjunction with the one that exists between photographer and photograph, but is nonetheless quite distinct; a relationship between photographer and *world*—“I intend to capture some state of affairs *s*”. Thereafter, it seems reasonable to think that we could collapse both relations into a single intentional relationship—“I intend to create such a *t* that photographically captures *s*”, “I wish to capture a certain *s* in the form of *t*”—or some other similar formulation.

Donald Davidson, as Lopes notes, observed that “attributions of intention are typically excuses and justification; attributions of agency are typically accusations or assignments of responsibility” (Davidson, 1980: 48; also see Davidson, 1963). This is a striking claim: that, despite the fact that we commonsensically conflate ideas of intention and agency, they in fact fulfil two entirely different roles in the explication of human action. His most famous articulation of this distinction involves the flipping of a light switch and thus accidentally disturbing the “proowler” lurking in his room: although Davidson *intends* to turn on the light switch to illuminate the room, he is

the presumption of veracity that gives all photographs authority, interest, seductiveness, the work that photographs do is no generic exception to the usually shady commerce between art and truth. Even when photographers are most concerned with mirroring reality, they are still haunted by tacit imperatives of taste and conscience” (Sontag, 2008: 6).



Figure 14: Diane Arbus, *Transvestite at a Drag Ball, New York City, 1970*



Figure 15: Henri Cartier-Bresson, *The Visit of Cardinal Pacelli, 1938*

also the *agent* responsible for alerting the burglar, even though he in no way intended to do so—indeed, necessarily *could not* have intended to do so, given his ignorance of the state of affairs.¹¹ There is a clear disconnect here: although the agent *responsible* for disturbing the burglar, his only *intention* was to turn on the light. Similarly: imagine, for a moment, that you are on the beach with some friends. You ask them to assemble in a line, their backs to the water, in order for you to take a photograph by which you’ll remember this sun-drenched holiday. The intentional attitude is readily parseable: the facts of the matter being particularly pleasant, you wish to capture them photographically, hoping to produce some kind of memento of your experience. Your friends line up, the sun setting behind them, and you momentarily marvel at the way the sun’s dying, orange rays cause their hair to burst into brilliant coronae. Everyone smiles, and you press the button. You hear the camera shutter click . . . and, just as it does so, an incontinent seagull passing overhead voids its bowels upon the idyll below. A scream, a cry of outrage, and the Polaroid dispenses a small, black and white rectangle which eventually resolves into the image of a gaggle of appalled holiday-makers, all of whom are ignominiously covered in guano. It’s clear that, in a case such as this, there is a clear disconnect between the intended outcome—that is, the perfect keepsake of a memorable afternoon—and that which actually occurred. In Davidsonian terms: although the intention was not realised, there remains an agent responsible for the act. The photographer is still *responsible* for the photograph—the photographer, after all, *caused* the photograph to happen—even if they failed entirely to realise their intentions.

Moreover, there is a deeper point hidden within these kinds of circumstances. Although we could certainly argue that the intentional story that I have presented above could just as easily be true of more traditional arts (we once again consider Beardsley’s hypothetical sculptor who intends to make something smooth and blue, but instead makes something rough and pink [Beardsley, 1958: 20])—and indeed, people like Carol Armstrong have argued that the automaticity of photography says nothing more about authorial agency than does a paintbrush for painting (Armstrong, 2012: 710)—I am inclined to think otherwise. For there is something indeed special about photography, particularly as it bears upon or reflects authorial agency: unlike sculpture, painting or music, photography is unique in that it “implicates change” (Lopes, 2012: 858); unlike the more traditional arts, cameras can capture “unwilled facts, caught willy-nilly, automatically, and all

11 “I flip the switch, turn on the light, and illuminate the room. Unbeknownst to me I also alert a prowler to the fact that I am home. Here I need not have done four things, but only one, of which four descriptions have been given. I flipped the switch because I wanted to turn on the light and by saying I wanted to turn on the light I explain (give my reason for, rationalize) the flipping. But I do not, by giving this reason, rationalize my alerting of the prowler nor my illuminating of the room. Since reasons may rationalize what someone does when it is described in one way and not when it is described in another, we cannot treat what was done simply as a term in sentences like ‘My reason for flipping the switch was that I wanted to turn on the light’; otherwise we would be forced to conclude, from the fact that flipping the switch was identical with alerting the prowler, that my reason for alerting the prowler was that I wanted to turn on the light” (Davidson, 1963: 686-687).

at once” (Armstrong, 2012: 706) at the moment of the photographic event. Consider: if we hark back to the distinction that we drew between the workmanship of certainty and the workmanship of risk in CHAPTER 2.1, it is not entirely clear whether photographic practice can be properly considered under either label.¹² Indeed, it seems to have certain qualities of *both* kinds of workmanship: it shares with the workmanship of certainty the fact that we find its “pure state in full automation”, but shares with the workmanship of risk the fact that “the quality of the result is not predetermined” (Pye, 1968: 4). Moreover, it is not predetermined in a way rather different to the way that making a painting by table by hand is not predetermined, for even if one were a photographer to exhibit maximal “judgement, dexterity and care”, the risk emerges *because* the photographic event is automated: there comes a point when the decision is *no longer in the photographer’s hands*—the possibility of non-intentioned formal outcomes emerge. And to be clear, this is something quite distinct from a case such as Monroe’s sculptor: although he or she might fail in realising their goal of roughness or pinkness, there is no formal aspect of the sculpture that is *non-intentioned*. There is no possibility for surprise guano here.

It is this property of photography (*viz.*, the possibility of non-intentioned content) that differentiates it from other arts, even if the products of those arts are indiscernible from a photograph, as in the case of the paintings of Chuck Close. Although an example of a more traditional art might elicit unintended consequences—for instance, I might write a book that I intend to be deeply serious, only to have my opus met with gales of appreciative laughter—the *formal* qualities of the artwork in question (in this case, the words printed upon the page) are themselves fully intended. The same is true for Chuck Close’s self-portraits: despite having the appearance of a photograph, every single piece of visual information is the product of an intentional, minded act; a product of intentionally putting paintbrush to canvas.¹³ Conversely, this is simply untrue for photography: it is the only art where it is genuinely possible for the formal aspects of the work—say, a shitting bird—to be non-intentioned. Indeed, if we are to find a means of meaningfully discerning photographs from photo-real paintings that does not rely upon a transparency thesis, then this seems like it could provide a solution: that is, the inherent and live possibility of non-intentioned formal content is a necessary condition for something to be properly considered a photograph.

It is also worth observing that although philosophers may have been somewhat slow on the uptake, photographic artists have long been aware

¹² That is to say: with the workmanship of risk “the quality of the result is not predetermined, but depends on the judgement, dexterity and care with the maker exercises as he works” (Pye, 1968: 4), whereas in the workmanship of certainty “the quality of the result is exactly predetermined before a single saleable thing is made” (Pye, 1968: 4-5).

¹³ Although one might, with some justification, argue that abstract expressionism compromises this assessment, I am unconvinced. By example: Jackson Pollock, according to his own testimony, claimed that he had “as much control as possible over the painting process”—a claim that seems incompatible with the readings of wild performativity that generally accompany his work (Jackson Pollock, quoted in Janecke, 1995: 163, n. 212).

of photography's intentional uniqueness. If we return to the type-token distinction between those artefacts produced either with or without a clearly pre-determined outcome, we can see that the happenstance nature of photography allows photographers to render visual artefacts that would be impossible to produce via more traditional means. That is to say, whereas a holiday snapshot is an intentional act of the sort "I intend to create *t*"—where *t* in this case is a photograph with a predetermined outcome—when a photographer makes a statement of the sort "I intend to create *T*"—a photograph *without* a predetermined outcome—there are several ways in which this could be the case. The first way that a photographer could choose to create a *T* is in essence no different to the way that a carpenter might create a *T*-table: just as a carpenter can experiment at the risk of jeopardising the outcome of the activity, so too can a photographer—say, by adjusting or otherwise acting upon the shutter speed, white balance, f-stop or the photo stock directly—act in such a way as to make the final product uncertain. However, although there is the real possibility that the products of their intentional acts will turn out poorly, the formal products of acts of this kind remain strictly intentioned.

However, there are other methods by which *T* can be made—methods that are specific to the medium. An early and famous example of a photograph of this sort is Henri Cartier-Bresson's famous *The Visit of Cardinal Pacelli* (FIGURE 15), which was notoriously taken by holding the camera high over his head and shooting without any clear awareness of what was in frame. Although we can certainly make the case that the contents of Cartier-Bresson's photograph is obviously going to be restricted by certain brute facts—the fact that the photograph was taken on Earth and not Mars, for instance, and that the lens was pointed broadly towards the centre of the crowd amassing outside Sacré-Coeur—he had no knowledge of what the photographic event would capture: the back of the Cardinal's head, a petitioner kissing his ring, a woman looking plaintively into the Cardinal's eyes. In a move that would be impossible for any artform without the degree of automatism that photography offers, Cartier-Bresson captured an image where not only almost *all* of the formal qualities of the work were non-intentioned, but an image that was *intentional yet non-intentioned*. This very obviously seems to be a very different kind of "I intend to create *T*" statement; it is an intentional arrangement that would be impossible to realise in non-photographic media, and it is the possibility to create works of this kind that provides the most robust response to Scruton's reductive allegations. In an Allenian sense, the novelty of taking a photograph—that is, the possibility of superlative artefactual performance—lies in taking advantage of the bizarre, contingent web that exists between mechanistic camera, intentional photographer and haphazard world.

4.4 *Carving Photography at its Joints, 2*

It should already be clear that the intentional relationships that hold between the various parts during the taking of a photograph are in fact far more complex than traditional analytic accounts describe. Given that fact, it should prove unsurprising that the relationships that hold between photographs, viewers and things-in-themselves are equally complex, and have—as I shall demonstrate—quite significant ramifications for how and if we should properly judge photographs as being in some sense knowledge or world-bearing. To begin, it seems unambiguous to claim that photographs (item 4) are, per Walton and Currie, traces of the world. They naturally mean the world in that the thing-in-itself (item 3) being the way that it is means_N that the photograph takes the form that it does. However, I want to be careful to clarify that this assumption does not carry more weight than it should; I am not trying to argue (cf. Walton and Scruton) that photography is a kind of *seeing* in the same way that looking through spectacles is a kind of seeing, but more that photography is “simply the inevitable outcome of a certain series of events” (Snyder and Allen, 1975: 157). Although it seems true that, by definition, photographs have a causal relationship with that which was photographed (Lopes, 2012: 438), the mere fact of that relation does not have any greater significance for the relationship between photograph and world. Despite the fact that the world means_N that the photograph takes the form that it does, this is not the same as claiming that the photograph has a kind of *identity* with the world—as if seeing the photograph is the same as seeing the thing-in-itself.

This distinction—that although a photograph is a trace of the world, it is nonetheless not properly considered a form of seeing—finds early articulation in Joel Snyder and Neil Walsh Allen’s¹⁴ 1975 “Photography, Vision, and Representation”. Though Scruton’s paper followed some six years after Snyder & Allen’s article was published, it is interesting in that Snyder & Allen’s account, perhaps anticipating the shape of photography scholarship in the years to come, provides something in the way of a rebuttal against the transparency theses of later decades. To this end, Snyder & Allen ask us to consider a photograph of a horse galloping. Now, if the photograph were taken with adequate exposure and a fast enough shutter speed, it would be possible to capture the static image of a horse in mid-gallop: “we have no reason to doubt that, at a certain moment, the horse ‘really’ assumed that posture. Here we are simply extending and modifying the notion that the camera is an eye” (Snyder and Allen, 1975: 157). However, if the photograph were taken under even slightly different circumstances—say, if the shutter were to remain open for slightly longer—we would not see a horse frozen in mid-gallop, but would instead see the four legs of the photographed horse rendered a colourful blur. Curiously though, we do not react to these photographs in the same way. In the instance of the first photograph, there is a sense in which we believe that the horse did indeed adopt that particular

¹⁴ No relation to Barry Allen.

pose at least once during the completion of its gait; in the instance of the second, there is no genuine confusion about whether or not the horse really became a blur: “[we] assume, instead, that the horse ‘really’ galloped and that this galloping plus perhaps the movement of the camera and the peculiarities of the film resulted in the horse being characterised as an equine blur” (Snyder and Allen, 1975: 157). This is what Snyder & Allen mean when they speak of photography as the “inevitable outcome of a certain series of events.”

Snyder & Allen then ask us to consider “another equestrian example”: that of the photofinish camera as they are employed in horse racing. Unlike other kinds of cameras, photofinish cameras do not take photographs as discrete images, whether digitally or to photostock. Instead, the photofinish camera is fitted with a long piece of photographic film hooked to a motor, and when the motor is switched on, the strip of film is passed in front of a thin vertical slit—the aperture—which is trained upon the finish line of the track: “[as] no shutter interrupts the light on the way to the film while the camera is running, the final result will be a single still picture” (Snyder and Allen, 1975: 158). Importantly, this means that the photograph can capture the exact order of all of the horses as they cross the finish line—something that would be impossible with more conventional photographic means. However, with the photofinish camera “it’s all very easy: whatever horse is seen to be to the right of another horse was recorded on the film first and therefore reached the finish line before the other horse” (Snyder and Allen, 1975: 158). This means that the finish line that we see on those images (as in FIGURE 16) is a later addition by the camera operator: a helpful fiction to ascertain which horse came first, given that literally *every point along the photographic reel* is the finish line.

What is particularly interesting about all of this, as Snyder & Allen rightly point out, is that there is something rather *upsetting* about the realisation that photofinish photographic images are not actually depictions of the event *as we perceived it*; looking at such a photograph, we are inclined to believe that we are seeing a picture of a certain number of horses that were in different positions at the same time. However, in the case of a photofinish photograph, we are actually not seeing this at all; instead, we are seeing a certain number of horses that were in the *same position at different times*. Photofinish photographs are, unlike what we would normally expect, less measures of distance than they are measures of time: “[we] do not know how far the winning horse was ahead of the place horse at the time of the finish line—all we know is that it took a certain amount of time for the place horse to cross the finish line after the winner” (Snyder and Allen, 1975: 159). Astoundingly, this means that although the photofinish image is very much an accurate—indeed unimpeachable—depiction of the final positions of horses in a race, and although the production of this image has everything to do with certain processes being in place and certain physical laws being the way that they are, our naïve *interpretations* of the photograph has almost nothing to do with the actual processes by which the image was cre-

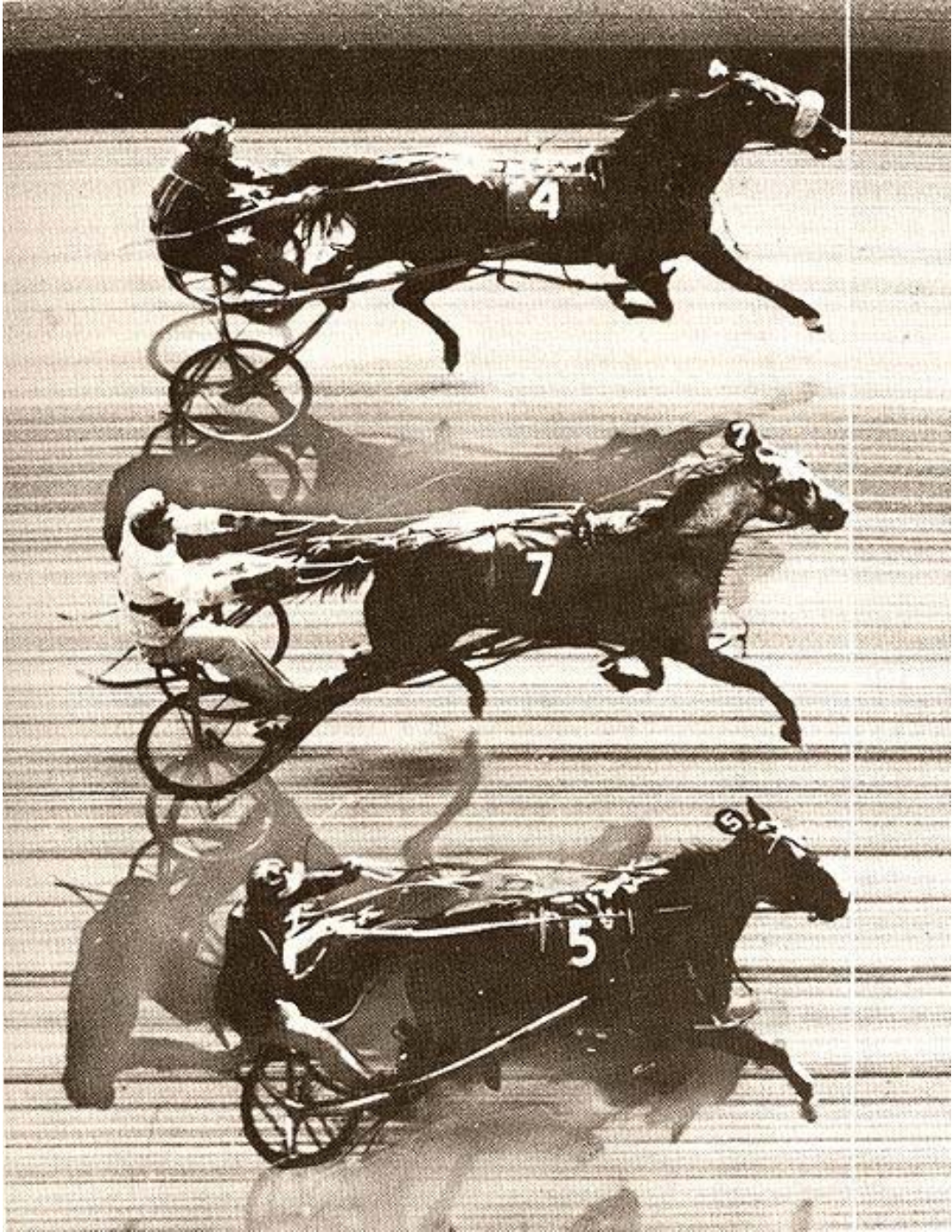


Figure 16: First triple dead heat in harness racing, Freehold Raceway, 3rd October 1953

ated. An image like this is clearly *not* transparent to the world in the way that Scruton and Walton have argued, even though it very much *seems* like it is. As Snyder & Allen write: “[the] mechanical relations which guarantee the validity of the photograph as an index of a certain kind of truth have been almost completely severed from the creation of visual likeness” (Snyder and Allen, 1975: 159). The photofinish image may naturally mean that such-and-such horse ran the best time by virtue of the photo being a trace, but that it by no means the same kind of thing as saying that the photograph allowed us to *see* the race, or that the camera was in any way *transparent* to the race.

However, although this seems a perfectly satisfying answer, it opens a larger problem: if the relationship between photograph and world is that of a mere trace, what exactly *are* the relationships that hold between the viewer and the photograph, or the viewer and the thing-in-itself? It seems clear that we can no longer innocently endorse the unambiguously embodied relation posed by Walton: (I-photograph) → subject. We might want to say instead that the relationship between viewer, photograph and subject is hermeneutic, in perhaps the same way that the relationship that holds between photographer, camera and subject is hermeneutic (if complicated, per our discussion above). But is this correct? Can it be the case that, rather than photographs allowing us to see the world through them, the world has been *read* by the camera and *translated* into a photograph? To antagonise this problem further, it is necessary to finally begin answering one of the questions with which we began this enterprise: what does it mean to *know* the contents of a photograph? Obviously, according to the work of Scruton and Walton—perhaps even Currie—the problem is a total non-starter, being no more epistemically problematic than the experience of the world more broadly. By this reading, the examples with which we opened this inquiry—the CCTV footage, or the gumshoe’s manila folder of incriminating photographs, as outlined all the way back in CHAPTER 1—can be plainly said to be both world-bearing and truth-bearing. A close enough relationship between world and photograph guarantees that drawing conclusions from photographic evidence of an event is broadly similar to drawing evidence from direct experience of that same event. However, as we have articulated, this account is quite clearly problematic: although we can say the photograph is a trace of the world, that is obviously not the same as saying that it is world-bearing in the sense that it necessarily aligns with our experiences and expectations.

Helpfully, Jonathan Cohen and Aaron Meskin, in their “On the Epistemic Value of Photographs” have provided us with something of a roadmap out of this problem. Acknowledging both that the Waltonian account is unsatisfying, and yet also acknowledging that it has been “surprisingly difficult to say just what is wrong about the transparency thesis” (Cohen and Meskin, 2004: 197), Cohen & Meskin endorse an account of the opacity of photographs to the world, providing an account that argues that in order to *see* something, we must have the right kind of egocentric, spatial relation-

ship with that thing: we must have an awareness of how it relates to us *phenomenologically*, between two bodies in space. Accordingly, developing an idea introduced by a number of previous authors,¹⁵ Cohen & Meskin argue that in order to *see* something, we must encounter it in the *right way*; the viewer must be in possession of the right kinds of information about the subject—information that, moreover, is premised upon the object’s spatial relationship with the perceiving ego. They quote both Currie and Noël Carroll with some approval:

With originally seeing, we get information about the spatial and temporal relations between the object seen and ourselves. [...] Photographs on the other hands do not convey egocentric information; seeing a photograph does not tell me anything much about where the object photographed is in relation to me. (Currie, 1995: 66, in Cohen and Meskin, 2004: 197)

I submit that we do not speak literally of seeing objects unless I can perspicuously relate myself spatially to them—i.e., unless I know (roughly) where they are in the space I inhabit. (Carroll, 1996: 62, in Cohen and Meskin, 2004: 197)

Now, if we recall from the prior section, Currie argues that traces, contra Walton and Scruton, occupy a third ontological category, separate from either representations such as painting or the lived experience of the thing-in-itself—and that, moreover, this category manages to maintain a nondoxastic, naturally meaning relationship with the world. However—and this is where it starts to get a little tricky—even though the relationship that holds between photograph and world may be nondoxastic, at least insofar as the contents of the trace are not subject to my beliefs on the subject, it is less clear whether or not *my* relationship with a trace is equally nondoxastic. As Cohen & Meskin write, possibly the most obvious way of parsing Currie’s or Carroll’s proposal is by arguing that in order for an agent to *see* something, it must be in possession of the right kinds of *beliefs* about the subject; for me to *see* the tree in the front yard of my house, I have to make and then endorse some kind of judgement about its location with regards to my embodied perception—a kind of *egocentric spatial belief*. Furthermore, it seems quite clear that both Currie and Carroll endorse some kind of doxastic idea of seeing, as Cohen & Meskin observe: “For example, Currie specifically refers to the ‘kinds of judgments we make in cases of ordinary seeing . . . which have no counterparts in the case of seeing photographs.’ Similarly, Carroll speaks of ordinary seeing as requiring knowledge about spatial relations” (Cohen and Meskin, 2004: 198).

However, as Cohen & Meskin note, Walton in another paper argues convincingly that a doxastic component to seeing is too heavy and cumbersome a requirement to render proposals of that kind convincing. In order

¹⁵ Cohen & Meskin cite Carroll, 1995, Carroll, 1996, Currie, 1991, Currie, 1995 and Warburton, 1988 as being of particular significance.

to demonstrate this point, he asks us to imagine what he considers two relevantly similar situations: in the first, the viewer receives visual information about a carnation through a long series of mirrors, though the viewer does not know how many mirrors nor the carnation's true location; in the second, the viewer receives visual information from a carnation that is right in front of him or her, but the many mirrors around confuse or otherwise compromise the viewer's beliefs on the subject—the viewer may develop the mistaken belief that he or she is looking at a reflected carnation, for instance (Walton, 1997: 70). As seems clear, in neither case is there a clear judgement about the location of the carnation; there is no obvious knowledge claim that can be made about the carnation's location, and accordingly—if one is to endorse a doxastic view of seeing—it seems that we should claim that neither example should qualify as “seeing” in any real sense. Walton argues that this claim is clearly undesirable; although we might be in possession of incorrect information regarding the location of the second carnation, that does not mean that we do not see it. Accordingly, he claims that the two cases are functionally indistinguishable: one sees the carnation in the first instance, albeit prosthetically, just as one sees the carnation in the second. In neither case is a judgement or a knowledge claim required.

Although I am with Walton on the first point—that a doxastic component to seeing is an unnecessarily burdensome requirement—I very obviously differ on the second point; indeed, were I also to endorse the claim that they are like instances I would be forced to once again revisit the transparency thesis. However, Cohen & Meskin, citing Fred Dretske's *Knowledge and the Flow of Information*, provide an alternative in the form of a model that is both embodied and yet without a doxastic component. In this characterisation, seeing something relies upon the viewer having access to egocentric spatial *information*, as opposed to holding an egocentric spatial *belief*; it is more about the information-carrying nature of the world than it is about the viewer's beliefs about that information. That is to say, what Cohen & Meskin mean by “information-carrying” is that there holds “a kind of (objective) probabilistic, counterfactual-supporting connection between independent variables” (Cohen and Meskin, 2004: 200). For cases such as the relationship between our Venus and the photograph, to reference a previous example, this means that the photograph means_N Venus. The relationship is observable first because the probability of the photograph of Venus being conditional upon the actual form of Venus is much higher than the probability of the photograph appearing to be Venus and the object being something else entirely—a statue of Zeus, for example, or a small and rather yappy dog. Moreover, the fact that the relationship is meaningfully probabilistic is made clear by the various counterfactuals that can be brought to play: that is, if the statue of Venus were in some sense different, then the photograph of Venus would also be different.

Accordingly, Cohen & Meskin's thesis relies on the assumption that in order to *see* something—say, the hamburger in your hand—that capacity is premised upon having access to a specific kind of egocentric spatial infor-

mation. Your access to that information is premised upon having the right *kind* of relationship with the hamburger; a relationship that is perceptually situated and embodied is “produced by a process that carries spatial information about the object. That is, x sees y through a visual process z only if z carries information about the egocentric location of y with respect to x ” (Cohen and Meskin, 2004: 201). That is to say: when I look at a photograph of Venus, I am not actually seeing Venus, contra Walton’s claims: although I have egocentric spatial information about my relationship with the object in my field of vision (that is, the photograph), I have no such egocentric spatial information about my relationship with the depictum (that is, Venus).

[Our] proposal provides a principled basis for rejecting photographic transparency. That is, it implies that photographs and films do not allow us to see the objects they depict. For, as we have maintained, visual processes involving photographs and film fail to carry egocentric spatial information about their depicta (although they do carry some sort of information about their depicta): there is no probabilistic relationship between the photographic/film image, on the one hand, and the egocentric location of the depictum, on the other. (Cohen and Meskin, 2004: 203)

Although I may know something about the photograph (the kind of card stock on which it is printed, the camera used to capture the image, presence and type of filters, the identity of the captured content) it is an error to think that knowing about the photograph means that I *know*, in any serious sense, about Venus. Recognising the photograph as being *of* a statue Venus is the kind of modest perceptual judgement that can be made; saying that one can directly *see* the statue of Venus from the photograph is quite another thing entirely.

At this juncture, it seems helpful to summarise our findings thus far in order that we are better able to isolate any remaining questions. To wit:

1. The intentional actor is responsible for the creation of the photographic trace, though the content of the trace is not dictated by the intentional agent. Although the photographer is responsible for the frame of the photograph and selecting the moment at which the photograph is taken, photographs invariably contain non-intentioned content which may exceed the limits of or otherwise compromise the intentional attitude of the photographer. This possibility bespeaks a Davidsonian distinction between the intention of the photographer—that which the photographer intended to capture—and the responsibility of the photographer for whatever image is actually captured.
2. Photographs *naturally mean* the world because we do not require additional information or some kind of supplementary story to explain



Figure 17: Hubble Space Telescope, *The Pillars of Creation*, 1995

the relationship between photograph and world; the form of the photograph and the form of the world are necessarily contingent, with the photograph being “simply the inevitable outcome of a certain series of events” (Snyder and Allen, 1975: 157). So, in the case of the photograph of the Pillars of Creation, that trace means_N the actual Pillars of Creation.

3. Despite the fact that photographs mean_N the world, we do not see the world through the photograph. Although the form of the photograph is contingent upon the form of the world, the relationship is not so close as to guarantee that we see the world through the photograph. Instead, due to both technological contingencies (per Snyder) and the epistemic limitations of egocentric embodiment (per Cohen & Meskin), we only have a nondoxastic, information-carrying relationship with the perceived object—in this case, the photographic object (say, *The Pillars of Creation*, [FIGURE 17]), and *not* with the scene, event, person or place depicted by the object itself (the actual Pillars of Creation).

Accordingly, it seems clear we still require an account of the epistemic relationship that holds between the viewer and the photograph. If photographs are not a form of seeing—if we are incapable of observing the world through a photograph—then how is it possible for us to render judgments about the world based upon photographic evidence? When we observe the famous false-colour photograph of the Pillars of Creation taken by the Hubble Space Telescope, are we game enough to say that we do not

in some sense *see* the stars being born? How is it possible to extract data from a trace if we are not in any real sense seeing its contents? On this point, we have already seen that Cohen & Meskin argue photographs are, in some important sense, information-carrying; although we are not seeing the object in the photograph, the photograph itself is *some kind of evidence* of a substantive spatial, egocentric and information-carrying relationship that occurs between the photographed object and the camera, even if the viewers of the photograph themselves *do not* have a similar relationship with the photographed object. Acknowledging this relationship, Cohen & Meskin argue that photographs are “epistemically special” in a way that objects like paintings are not; “they are information carrying whose conditions of employment are easier to satisfy than other information carriers” (Cohen and Meskin, 2004: 204). But epistemically special in what way, exactly?

In their paper, Cohen & Meskin claim that in order for a person to *see* something, they must have access to two things:

1. information about the visually accessible properties of the representational object, and
2. information about the egocentric location of the representational object. (Cohen and Meskin, 2004: 204).

Now, it seems clear that, under normal circumstances, embodied sight fulfils both requirements: when I look at a carnation in front of me, I am not only able to access its visual properties (redness, smallness—type 1), but also its spatial location based upon my egocentric position (type 2). The same is also true in some cases of the use of visual prostheses: when I look at someone else through a single mirror, although my access to the spatial information is attenuated, I can still nonetheless parse that visual data in the relevant spatial, egocentric way. However, looking at a trace of something is rather different: although it is obviously true that a photograph or a charcoal rubbing of a carnation is able to afford me information (even if incomplete) about the visual properties of an object, it entirely fails to give me egocentric spatial information about the location of that carnation. In this sense, looking at a photograph of the Pillars of Creation is no different to looking at the Pillars through a telescope: in both cases has the phenomenal experience been denuded of egocentric content. Don Ihde echoes this sentiment in a telling passage in *Technology and the Lifeworld*: “To see the moon through a telescope is to see it close up but also to lose its position in the sky. Lens technology transforms the very sense of space I experience [...]. It transforms it into a kind of unreal, flattened and narrowed ‘world’” (Ihde, 1990: 50).

Given the limited epistemic ambit of photographs, the question then of what it means to parse or otherwise understand photographic content becomes an interesting one. Although we do not see the object in the photograph, the photograph itself is a trace of an event wherein a camera had access to the relevant egocentric information. Because of the automatic quality of the camera’s internal operations—the fact that the photograph is

the inevitable outcome of a certain series of events—this outcome is more reliable than in the case of media such as paintings, where the outcomes are entirely more subject to the vagaries of human agency. So, even if photographs are indeed “epistemically special”, it is only because they *necessarily* capture type 1 information, whereas paintings only *incidentally* do so: unlike photographs, the contents of paintings are not parasitic or otherwise contingent upon the world but instead exist only in a kind of formal relationship with the world.

In that case, then, in order to parse a photograph, we are required to *read* it in some important sense; given that we do not *see* the things represented (as we noted, any information it captures is merely *incidentally* accurate), in order to understand the visual data captured by a photographic trace we are required to provide some kind of account of how and why the image is the way that it is. That is to say: even though the relationship that holds between world and photograph is one of natural meaning—the form of the world entails the form of the photograph, and vice versa—the same cannot be said of the relationship between the photograph and the viewer. Instead, the relationship is entirely *non-natural*: the photograph being the way that it is does not *necessarily entail* that I will read it a certain way. Indeed, Snyder & Allen make a very similar point in “Photography, Vision, and Representation”: that, although we might see an image such as Dennis Stock’s photograph of James Dean at the grave of Cal Dean (FIGURE 18), there is nothing in the photograph that guarantees that we should accept that particular narrative: that Dennis Stock took James Dean to the site of Cal Dean’s grave, and captured a trace of him exhibiting “what Stock believed to be Dean’s attitude toward death” (Snyder and Allen, 1975: 167). We should not only understand that this particular photo is the aggregate product of potentially thousands of different contingencies—the selection of location, the nature of the subject, the kind of camera, lens and film used, the lighting, the possibility of unintended content, the fact that this photograph could be only one among thousands taken that day—but also that there is nothing to tell us that this photo is even of James Dean, beyond the fact that it looks like him. Snyder & Allen write:

One is tempted to say that it does, that it establishes certain facts about James Dean—that, at the very least, he once stood next to the grave of Cal Dean. But even this minimal statement is not incorrigible. We might be challenged to prove that it was indeed James Dean, not a look-alike, or that this is a real grave, not a stage set, or that Cal and James Dean were related. If we were to establish that everyone and everything is what it seems from external evidence, what new facts does the photograph establish? It would seem then to establish the same things about James Dean that would be established about the subject of this picture even if he *weren’t* James Dean, or in fact had never existed at all. Of course our knowledge about the real James Dean—that he died young or that he played a character



Figure 18: Dennis Stock, *James Dean at the Grave of Cal Dean*, 1955

named Cal in *East of Eden*—may add a good deal of poignancy to this photograph. This sort of thing happens all the time, regardless of medium and even regardless of “the facts.” (Snyder and Allen, 1975: 168)

It seems clear: there are no “facts” in a photograph; without some kind of intelligible narrative—some non-natural account—photographs say nothing to us. They are information-carrying in the sense that they provide us with visual data in a manner that is more reliable than painting, and they are “epistemically special” for this fact. However, this visual data does not itself comprise a fact or a field of facts; the data must be received, sorted, parsed and then narrativised in order for us to make sense of it, denuded as the image is of egocentric spatial information; what someone like Ihde might call the “phenomenological plenary”.

However, that observed, it does seem fair to think that this visual data more readily lends itself to the right kind of intelligible sorting and parsing than other kinds of visual data, with that fact likely premised upon the assumption that photographs are the product of an impersonal, automatic, strictly physical reaction, which is why someone like P. J. C. Janssen, to whom we referred at the start of this chapter, could make the claim that photographic film is the “true retina of the scientist” (Ihde, 2002: 44). Although this seems like a clear example of the picture superiority effect in play, this bizarre web of epistemic relations and commitments that occupy centre stage in photographic practice nonetheless explains why it is so easy—and so seductive—to carelessly assume that the camera is, according to the Ihdean nomenclature, a true “epistemology engine”: even if cameras do not truly allow us to *see* the world, the visual data captured by cameras is sufficiently compelling, and sufficiently accurate, that we nonetheless as-

sume that they do. Of course, as I have argued here, this is an error it would do us well to avoid.

It is at this point that it is perhaps worth reconnecting this material with the discussion on Allen in CHAPTER 2 and Ihde in CHAPTER 3. Now, observant readers may be struck by the fact that the Gricean natural/nonnatural distinction looks a surprising amount like the distinction that we made in the last chapter about different kinds of *supervenience relations*. That is to say: if we take Walton at face value and accept that the relationship between photographs and world is characterised by natural meaning, then we can make the assumption that they have natural meaning because photographs, like other artefacts, have a *logical* supervenience upon the world. Although the contents of a photograph may not be accurate, the purported transparency of the technology means that the supervenient B-facts of the photograph appear to be *necessary* products of the A-facts; it is ostensibly the case that no additional facts need to be postulated in order to provide an account of why a photograph looks the way it does. Moreover, being logically supervenient, it also seems plausible to claim that photographs are—per the second chapter—also reducibly emergent phenomena; they are complex products that are nonetheless straightforwardly deducible from low-level phenomena (the reaction of light upon silver salts in analogue cameras; algorithmic processing in digital cameras). Even if they are not truth-creating, they are still somehow obliquely *truth-bearing*; due to the bilateral symmetry that holds in cases of reducible emergence (just as if we have a sufficiently complete picture of the A-facts then we can predict the emergent B-properties, so too does it seem that with a sufficiently complete picture of the emergent B-properties we could presumably successfully extrapolate the A-conditions that gave rise to the B-properties), photographs *seem* like they are epistemically significant because of this logical supervenience relation.

Of course, this would be entirely well and good in the event that it was even possible to speak of acquiring a sufficiently complete picture of the emergent B-properties. As we have already clarified, photographs do not contain anything in the way of *facts*, because they make no *claims*. Although it seems plausible to think that the relationship between the photograph and the world is both logically supervenient and reducibly emergent, we cannot say the same of the relationship that exists between the *viewer* and the world when *mediated by a photograph*. The photograph, as we have clarified, does not capture the world and cannot give it to us naïvely; we require something to read it by. As Nelson Goodman points out: our ability to read images in the right way—even ones with near-maximal veridicality—requires us to have in our possession a kind of key that is relative to conceptual schemata (Goodman, 1976: 10-19); and it is this *key* that means that the photographically mediated relationship between world and viewer is in fact *naturally* supervenient; we require additional facts to make sense of the data. The information is not given to us freely; we must make sense of it, *narrativise* it, in order for it to be of any help to us. Because they afford us the illusion of showing us the world-as-given (thus rendering them an

epistemology engine without peer), photographs subsequently *seem* to be far more epistemically significant than they actually are.

Thus, to portray the technological relation in terms of an Ihdean schematic, we see that viewing a photograph is to engage in two kinds of relations. In the first place the viewing is an alterity relation, in the sense that the photograph is the object of our attention due to its “epistemic specialness”. Because of the relationship that is presumed to hold between the camera and the world—it seems like another *viewer*, per Locke and Descartes’ view of the camera obscura as analogous with the eye—it appears to us as a *quasi-other*. Like a religious idol or an automatic teller machine, a photograph is the kind of object that demands that we treat it *as* an other; they seem, by virtue of having been made *automatically*, or at least with the presumption of automatism, not contingent upon our interaction or continued intervention. Instead, feeling like an other, it *demand*s our attention because it seems to be, in an important respect, relevantly *like us*; the photograph itself becomes the object of our attention because we are compelled to take it seriously.

I → photograph-(-world)

However, what distinguishes the tenor of our relationship with photographs from other alterity relations is that, appended parasitically onto the alterity relation is an *hermeneutic relation*, which is the kind of relationship that Ihde, in *Technology and the Lifeworld*, poses exists between human beings and photographs. As noted in our discussion of Scruton and Walton, this is the form that the technological relation would take in the event that photographs did in fact observe some kind of transparency thesis: the device itself becomes a means by which it is possible to perceive the world in that the camera *reads* the world and provides a kind of translation of that data into a visually parseable form. However, as we have clarified, this cannot be the case if we do not *see* the world through the photograph; if the photograph is merely the dumb product of a series of brute physical processes, the photograph can make no claims.

[I → photograph-(-world)] → (camera-world)

Subsequently, the hermeneutic relation that exists between the photograph and the camera-world is one denuded of semantic significance, and is the locus of Gricean natural meaning (means_N). Conversely, it is the alterity relationship between the I and the photograph which is the locus of non-natural meaning (means_{NN}); like ascribing mental states and intentions to human beings or non-human animals in order to parse their behaviour, we must ascribe narratives onto photographs in order to parse the mute visual data available to us. In this respect, photographic images are much like evidence for the detective. The scene of the crime, so to speak, is readily available to our senses and intuitions: we see the chalk outline around the dismembered corpse, the splatter of gore against the far wall, the bloodied butcher knife, the stopped clock with the shattered face; like

a detective, we are in possession of certain facts about the point of contact between world and the image. Although we do not know who committed the murder—whether it be a botched break-and-enter, a rancorous ex-lover, a cheated business associate, or even Miss Scarlet in the kitchen with the candlestick—we can extrapolate from the available evidence models with which we try and account for the observable facts. It is what we might call a *scientific* view, this exercise in abductive reasoning: in order for the B-facts to be true, we can surmise that certain A-facts *might* be true in order for those B-facts to be a matter of course. Not being a deductive process, the A-facts are sufficient but not *necessary* for the B-facts; the premises do not guarantee the conclusion.¹⁶ Indeed, this lack of necessity is why we are able to derive a *number* of models in order to account for the B-facts, and—given that photographs cannot confess—it is clearly within our interest to pick the most parsimonious response, all other things being equal. Like the detective, there remains room to abductively generate models by which the B-facts of photographic content can be accounted; we are clearly within our rights to extrapolate models describing *what might be the case* in order for the B-facts of the photograph to be what they are. However, we must at all times be aware of the epistemic limits of these kinds of models; we should not assume that photographs contain *facts* and let our naïve assumptions carry us away.

Now, it seems plausible to think that these kinds of accounts are basically *Allenian* in that the success or failure of these performances—and it seems unambiguous to think that accounts of this type *are* performances—is premised upon a kind of superlativeness criterion, just like any other kind of description. The best description ($p+$) of the visual properties of a given photographic trace is the one that manages to be both parsimonious and ably account for the available data (k). Whatever facts we have in this case are mutable, plastic things, subject to change in the face of shifting data: a photo of a large hairy biped running into the forest may shift from Bigfoot into a large man in a suit once someone notices the silver zipper; the validity of our knowledge claims about photographs is entirely premised upon our ability to perform, with the data in mind, in the *right way*; a photographic reading is an instance of knowledge (n) if and only if the exemplary performance satisfies the success conditions: $p+$ is n iff $p+$ meets k_{p+} . Much as the creation of photographs allows for novel articulations of knowledge by virtue of playing with the unusual intentional character of the camera, the reading of photographs allows for similarly novel articulations. Although photographs can be read in the same manner as paintings—they are both not the case, in that they make no explicit claims to states of affairs in the world—our commitment to photographs is *greater*. Even if our access to the facts of the matter via photographic images is mediated and the image itself makes no claims to the truth, it is still significant that it is the product of a

¹⁶ For more on this subject, please refer to the work of Charles Sanders Peirce; “On the Logic of Drawing History from Ancient Documents, Especially from Testimonies”, is particularly helpful (Peirce, 1999: 75-114.)

certain kind of automatic process. This is why Cohen & Meskin refer to photographs as being “epistemically special”; although they are themselves not the case, the fact that they are products, even tenuously, of the facts of the matter means that they retain a certain epistemic and ontological gravitas.

Accordingly, I argue in my next and final chapter that photographs, due to their afore-mentioned “epistemic specialness”, serve as a kind of temporary solution to the existential and ontological anxieties posed by technology that were discussed in CHAPTER 3. In doing so, I will draw substantively upon the scholarship of Gilles Deleuze and Stanley Cavell, particularly as read through the lenses of philosophers Paola Marrati and Robert Sinnerbrink.

[Scientific rays] were occult, supersensual, irrational; they were a revelation of mysterious energy like that of the Cross [...]. The historian was thus reduced to his last resources. Clearly if he was bound to reduce all these forces to a common value, this common value could have no measure but that of their attraction on his own mind. He must treat them as they had been felt; as convertible, reversible, interchangeable attractions on thought. He made up his mind to venture it; he would risk translating rays into faith. (Adams, 2008: 320)

5.1 *A Nihilism We Can Believe in*

Though we have yet to robustly engage with much material within the field of philosophy of film, it is unsurprising that its conceptual concerns overlap with those of philosophy of photography. Despite the fact that cinema has its own axes to grind with regards to the composition and assemblage of motion pictures, the epistemic and ontological concerns are the same: the fact that the photographic image is still in one instance and moving in another seems largely irrelevant to the problem of the nature of their relationship with the world. Accordingly, we will begin the final chapter with a discussion of the work of Gilles Deleuze, inarguably the most influential philosopher of cinema at present: just as Heidegger is an unavoidable obstacle in philosophy of technology, so too is Gilles Deleuze in his particular domain. We begin this chapter with an extremely brief rendition of the key concepts in Deleuze's work on cinema—namely the movement-image and the time-image—before examining, via Paola Marrati and Robert Sinnerbrink, the extent to which Deleuze can speak to us about the ontological anxieties introduced by technology.

One should understand that the aim of the first volume of Deleuze's *Cinema* is primarily to define the cinematic movement-image with respect to the irreducible positions that constitute the illusion of movement in the real world—the generic temporal instants that Deleuze calls the “any-instants-whatever” (Deleuze, 2005a: 3-4).¹ As Robert Sinnerbrink, in *New Philosophies of Film*, writes: “cinema is a mechanical system of *animating* images that enable the reproduction of movement ‘as a function of the any-instant-

¹ “[Movement] will always occur in the interval between the two [positions], in other words behind your back. On the other hand, however much you divide and subdivide time, movement will always occur in a concrete duration; thus each movement will have its own qualitative duration. Hence we oppose two irreducible formulas: ‘real movement—concrete duration’, and ‘immobile sections + abstract time’” (Deleuze, 2005a: 1).

whatever' [...], which are selected and combined in order to 'create the impression of continuity' (Deleuze, 2005a: 5). [...It is the] subordination of time to movement" (Sinnerbrink, 2011: 94).² Subsequently, Deleuze speciates the movement-image into three distinct categories, which correlate broadly to long shots, medium shots and close-ups, respectively. There is, moreover, a distinct semiotic rigidity to the movement-image, with Deleuze equating the affection-image and action-image with the Peircean semeiological concepts of the First and the Second, as he discusses in his 1888 "A Guess at the Riddle". To wit:

1. The *affection-image* occupies the gap between the perception-image and the action-image. Affect occupies the difference between the world as it presents itself to the camera (the perception-image) and the world as the cinematic actants believe that it *ought to be*, thus yielding the motive for the action-image: "Affection is what occupies the interval, what occupies it without filling it in or filling it up. It surges in the centre of indetermination, that is to say in the subject [...]. It is a coincidence of subject and object, or the way in which a subject perceives itself [...] 'from the inside'" (Deleuze, 2005a: 67). Although we are most familiar with affection-images in the form of facial close-ups, they can also be of affectively charged objects, as in the case of the blue box in David Lynch's *Mulholland Drive*, or the snow globe and sled in Orson Welles' *Citizen Kane*. Subsequently, it correlates with the Peircean First by virtue of the fact that it is strictly *monadic*; the image is not in relation to anything else. Peirce writes of the First: "The First is that whose being is simply in itself, not referring to anything nor lying behind anything. [...It] must be entirely separated from all conception of or reference to anything else [...]. It precedes all synthesis and all differentiation: it has no unity and no parts. It cannot be articulately thought: assert it, and it has already lost its characteristic innocence; for assertion always implies a denial of something else" (Peirce, 1992: 248). The correlation with the affection-image seems clear; as Deleuze writes: "Firstness is thus a category of the Possible: it gives a proper consistency to the possibly, it expresses the possible without actualising it, whilst making it a complete mode. Now, this is exactly what the affection-image is: it is quality or power, it is potentiality considered for itself as expressed" (Deleuze, 2005a: 100-101).

² A note on nomenclature: Deleuze's use of the term "image" is somewhat misleading, particularly in light of the way that we have thus far employed the word. Although my usage hitherto reflects commonsense usage (or, at least, so I hope)—that is, an artefact that has recorded or otherwise depicts perceptual information—Deleuze's "image" is borrowed directly from Bergson, in that for him *perceptions* are images. Viz.: although I am presumably interfacing with a real computer as I write this, the perceptual data that I am receiving from the computer—appearance, tactility, whatever—themselves are the plenary that constitute the phenomenological *image* of the computer. Although confusing, I will nonetheless observe Deleuze's nomenclature, for I suspect changing it to reflect my use of the word "image" would only be *more* confusing. Deleuze is hard enough without my own classificatory quirks obscuring the material further.

2. The *action-image* is the image that focuses upon the duration of action, particularly as it relates to the relationships that exist between constituent subjects, such as characters. Deleuze writes of the action-image: “The operation under consideration is no longer elimination, selection or framing, but the incurving of the universe, which simultaneously causes the virtual action of things on us and our possible action on things. [...] And, just as perception relates movement to ‘bodies’ (nouns), that is to rigid objects which will serve as moving bodies or as things moved, action relates movement to ‘acts’ (verbs) which will be the design for an assumed end or result” (Deleuze, 2005a: 67). As in the case of the perception-image, the action-image is subject to further speciation, falling into one of two categories: the *large form* or *small form*, where, in the case of the former, either the situation discloses the action, subsequently changing the situation (SAS₁) or, in the case of the latter, the initial action discloses a situation which subsequently catalyses more action (ASA₁).³ Regardless of its form, the fact that the action-image speaks of the domain of action, of the *dyadic* interplay between parts, is why Deleuze correlates it with the Peircean Second, which is not the domain of raw qualities (as in the case of the First), but is rather the domain of individuation: “[The Second] meets us in such facts as Another, Relation, Compulsion, Effect, Dependence, Independence, Negation, Occurrence, Reality, Result. A thing cannot be other, negative, or independent, without a first to or of which it shall be other, negative, or independent” (Peirce, 1992: 248). Accordingly, per Deleuze: “Everything which only exists by being opposed, by and in a duel, therefore belongs to secondness [...]. It is the category of the Real, the actual, of the individuated. And the first figure of secondness is that in which power-qualities become ‘forces’, that is to say are actualised in particular states of things [...]. It is here that the action-image is born and developed” (Deleuze, 2005a: 100).
3. The *perception-image* is the image that purely relates to the perception of sight, whether as if by a human agent (what Deleuze calls *solid perception*), the ambiguous elision of images (*liquid perception*), or as if seen by a non-human agent; as if the world could see itself (*gaseous perception*): “But the cinema is not simply the camera: it is montage. And if from the point of view of the human eye, montage is undoubtedly a construction, from the point of view of another eye, it ceases to be one; it is the pure vision of a non-human eye, of an eye which would be in things” (Deleuze, 2005a: 83). Unlike the affection-image and the action-image, which are both kinds of signs, the perception-image is in some sense the Zeroth to the First and Second of the affection-image and action-image; it sorts and sets limits to the facts of the matter—it sets them into Bergsonian “images”—allowing us to parse them in the first place. Paola Marrati writes:

³ We will not speak of this more, here; see Deleuze, 2005a: 145-181 for additional details.

“But the perception-image is not limited to sorting; it incurses the universe around itself and gives a horizon to the world. [...] Perception shows us the usable face of things, whereas action teaches us how to use them. Perception is thus always essentially sensorimotor and pragmatic, always oriented by and toward the needs and interests of life [...]. The belief that perception’s sole aim is pure knowledge, all too common in philosophy, is not merely an isolated error but also the origin of all sorts of false conceptions in metaphysics” (Marrati, 2003: 34). It is curious: although Deleuze is extremely equivocal about the nature of the perception-image—at least in the sense that he is far less specific about the nature of the perception-image than he is about affection- or action-images—it is also the image that seems to offer the most insight with regards to his metaphysical commitments. We will return to this point shortly.

Finally, we should understand that the triad of the movement-image is resolved in the relation-image, which is the first avatar of the domain of thought—the means by which we can speak of the camera encompassing thinking, or exhibiting a kind of mindedness by virtue of the affection-image and the action-image containing something in the way of mental content: “pure consciousness” in the first instance; implied in the “end of action (conception), in the choice of means (judgement), in the set of implications (reasoning)” in the second (Deleuze, 2005a: 202). It is the affection-image and the action-image that constitute cinematic characters, and it is these figures that “introduced the mental into the image” (Deleuze, 2005a: 202). Accordingly, the relation-image is the synthesis of perception-image, affection-image and action-image, or Zeroth, First and Second, thus introducing the Peircean Third: the “Third is that which bridges over the chasm between the absolute first and last, and brings them into relationship” (Peirce, 1992: 249); it “finds its most adequate representation in relation; for relation is always third, being necessarily external to its terms” (Deleuze, 2005a: 202). The Third is the domain of relations, of the possibility of intelligible accounts that can subsume all of the constituent parts. It—and the movement-image—is rational, muscular and positivistic, in that the Third is able to be reduced to and subsequently parsed as set of atomic constituents and relations. Paola Marrati writes: “[In the movement-image, the] relations of humans to each other and to the milieu, world or universe were organized around action. These actions were not necessarily happy, and were sometimes even tragic, but they were nonetheless always inscribed within a horizon of possible meaning” (Marrati, 2003: 79).

This material has been covered at both great length and depth by other authors, so we shan’t explore the movement-image further here. If nothing else, we should appreciate that the Deleuzian movement-image privileges movement *over time*; time is only indirectly articulated via the assemblage of movement-images that constitute works of cinema. However, there are problems lurking below the positivist motions of the movement-image; this “sensory-motor scheme”, or “perception-affection-action circuit”, as Deleuze

calls the set of relations that constitute the movement-image, suffers a kind of existential internal ruction after the Second World War—an event that he describes as the “crisis of the action-image” (Deleuze, 2005a: 201-219 and Deleuze, 2005b: 1-23). It is the nature of this crisis that will be the object of the rest of our discussion of Deleuze.

When Deleuze speaks of the crisis of the action-image, he is speaking of the decay of narrative forms, of the impossibility that narratives themselves are entirely parseable. With time subordinate to movement, cinema is rational and explicitly causal; the relationships between parts are clear and unequivocal, reflecting a general belief in an ordered and logical universe. Even in the case of the frenetic chaos of a Charlie Chaplin comedy, we admire it because the relationships between objects are deterministic; as Cavell writes in *The World Viewed*, although we cannot predict the outcome of the mayhem, each event is explicitly and transparently caused by the event before it, permitting “his Proustian or Jamesian relationships with Murphy beds and flights of stairs and with vases on runners on tables on rollers: the heroism of momentary survival, Nietzsche’s man as a tightrope across an abyss” (Cavell, 1979: 37). We might even say that the action in the action-image is *reducibly emergent*, in that complex outcomes are nonetheless entirely reducible to simple basal phenomena; the only thing preventing us from correctly anticipating the outcomes of Chaplin’s cinematic actions are our own intellectual limitations. Nonetheless, the crisis of the action-image is catalysed by our slightly gormless faith in a deterministic, predictable universe having been shaken by the horrors of the Second World War: “the crisis which has shaken the action-image has depended on many factors which only had their full effect after the war, some of which were social, economic, political, moral and others more internal to art, to literature and to the cinema in particular” (Deleuze, 2005a: 210). It is a move that echoes the writings of figures such as Arendt, Marcuse, Foucault, Adorno and Horkheimer: that the rationalistic positivism inherited from the Enlightenment—instantiated in the movement-image—leads one necessarily and inexorably to the violent and decadent excesses of National Socialism, Soviet communism and/or gratuitous consumerism (Sinnerbrink, 2011: 97).⁴

We hardly believe any longer that a global situation can give rise to an action which is capable of modifying it—no more than we believe that an action can force a situation to disclose itself, even partially. The most ‘healthy’ illusions fall. The first things to be compromised everywhere are the linkages of situation-action, action-reaction, excitation-response, in short, the sensory-motor links which produced the action-image. Realism, despite all its violence—or rather with all its violence

⁴ As Horkheimer and Adorno write: “Bourgeois society is ruled by equivalence. It makes dissimilar things comparable by reducing them to abstract quantities. For the Enlightenment, anything which cannot be resolved into numbers, and ultimately into one, is illusion; modern positivism consigns it to poetry” (Horkheimer and Adorno, 2002: 4).

which remains sensory-motor—is oblivious to this new state of things where the synsigns disperse and the indices become confused. *We need new signs.* (Deleuze, 2005a: 211, emphasis mine)

Accordingly, this crisis of the action-image catalyses the necessity for the developments of an entirely new kind of image: one in which plot is loosened; an image wherein archetypes and clichés become self-aware, celebrating amongst themselves; when space and the causal order are disrupted and dispersed. This is what Deleuze called the *time-image*—an image in which, rather than time being subordinate to movement, movement becomes subordinate to time. As Sinnerbrink writes: “Such images are no longer sensory-motor in orientation but reveal instead ‘pure optical and sound situations’ [...]. These are pure audiovisual descriptions that are no longer extended into action, that expresses a new way of depicting the world, opening up the intensive dimensions of time, affect and thought” (Sinnerbrink, 2011: 96). With movement subordinate to time, so too in this vein does Deleuze write that the time-image “is a cinema of the seer and not of the agent” (Deleuze, 2005b: 2); even the characters inhabiting the cinematic worlds of the time-image are watching each other and themselves, quietly aware of their own circumstances: “The characters are multiple, with weak interferences and become principal or revert to being secondary. It is nevertheless not a series of sketches, a succession of short stories, since they are all caught in the same reality which disperse them” (Deleuze, 2005a: 211). However, even this “same reality” is contingent, fissile; human being are only weakly moored to an indifferent cinematic universe where causation can no longer be relied upon to tie together events; where instead the action is punctured by meaningless chaos or maddening stillness. “[The] line or the fibre of the universe [...] has broken. [...] Reality] is lacunary as much as dispersive” (Deleuze, 2005a: 211).

It is one of the curious qualities of *Cinema 1* and *Cinema 2* that it is occasionally ambiguous as to what extent Deleuze is actually talking about film at all. Although his examples and nomenclature are explicitly cinematic, I am often uncertain as to whether Deleuze is actually speaking of cinema, or is describing a metaphysical program whereby reality is cinema. We have already noted his curious ambivalence regarding the true nature of the perception-image, particularly as it relates to the Real—what Deleuze, in a Spinozan turn, calls the “plane of immanence”; he writes of the perception-image as seeming to provide an horizon to experience in much the same way that the Husserlian transcendental ego, the Heideggerian *Dasein* or the Merleau-Pontian *corps propre* sets the experiential and conceptual limits of lived experience. This seems to lead him inevitably towards endorsing a kind of Bergsonian cinematic metaphysics, inspired at least in part by his earlier scholarship in *Difference and Repetition*—but it is also a metaphysics that contains within it the seeds of the disintegration of the movement-image.

The plane of immanence is the movement (the facet of movement) which is established between the parts of each system

and between one system and another, which crosses them all, stirs them all up together and subjects them all to the condition which prevents them from being absolutely closed. It is therefore a section; but, despite some terminological ambiguities in Bergson, it is not an immobile and instantaneous section, it is a mobile section, a temporal section or perspective. It is a bloc of space-time, since the time of the movement which is at work within it is part of it every time. There is even an infinite series of such blocs or mobile sections which will be, as it were, so many presentations of the plane, corresponding to the succession of movements in the universe. And the plane is not distinct from this presentation of planes. This is not mechanism, it is machinism. The material universe, the plane of immanence, is the *machine assemblage of movement-images*. Here Bergson is startlingly ahead of his time: it is the universe as cinema in itself, a metacinema. (Deleuze, 2005a: 59)

This paragraph serves as an early signpost for the crisis of the action-image that arises later in *Cinema 1*. That is, if Deleuze is discreetly arguing in favour of a plane of immanence constituted by the machine assemblage of movement-images—certainly, as least insofar as we are able to perceive it—then it seems to preclude the possibility of all actions being “inscribed within a horizon of possible meaning” (Marrati, 2003: 79). For, despite the universe being constituted by an infinite series of space-time “blocs”, they are fundamentally expressions of a kind of metaphysical monism, being of the *same substance*—that is, of immanence without opposition. He writes, with Félix Guattari, in *A Thousand Plateaus*: “Here, there are no longer any forms or developments of forms; nor are there subjects or the formation of subjects. There is no structure, any more than there is genesis. [...] Nothing develops, but things arrive late or early, and form this or that assemblage depending on their compositions of speed.” (Deleuze and Guattari, 2004: 266). So, despite the perception-image serving to partially constitute the movement-image, the provided horizon of experience is fundamentally a misleading one, for the plane of immanence itself is a realm in which positivistic or teleological explanations must inherently falter; with no real division between parts, there is no possibility of progress or of meaningful change. The crisis of the action-image seems not only an artistic or aesthetic crisis, but rather an ontological or existential crisis.

Suddenly, the crisis of the action-image is one of lived experience; not only are cinematic worlds rendered fissile and inexplicable, but so too is our own. With the twisted wreckage of positivism washing up upon our shores, we (to paraphrase Sartre) were forced, without traditions, with the means available, to render our stupor and forlornness in the midst of incomprehensible events. Moreover, I am not alone in having made this observation; Marrati, in her *Gilles Deleuze: Cinema and Philosophy* argues that Deleuze’s cinematic works are most correctly understood as, among other things, a paean to the expired possibility of revolutionary politics (Marrati, 2003: 5).

As traditional narratives have disintegrated, it is no longer coherent to aspire to new forms of political and social life, let alone to rely upon inexorable sociocultural *teloi* as in the case of antebellum, pre-Frankfurt School Marxism: “Dialectical or teleological modes [...] give a direction and a sense to the events that punctuate history. The idea of revolution is a typical example of this: the new world to come regulates human actions and gives them a real significance. [...] The thought of immanence implies the rejection of any historicism and of the subordination of time to the oriented path that historicism [...] necessarily implies” (Marrati, 2003: 81). Accordingly, Marrati argues that Deleuze’s description of the crisis of the action-image is no more an analysis of a shift in cinematic aesthetics than it is an analysis of the crisis of historical grand narratives more generally; a grim antecedent to the gormless optimism of Francis Fukuyama’s “The End of History?”.⁵ Moreover, Deleuze is not alone in making this point: as Robert Sinnerbrink notes, Cavell expresses a similar sentiment, diagnosing our suspicion of truths and grand narratives in lived experience as being symptomatic of a kind of existential dissatisfaction with the contemporary era due to the lasting effects of the Second World War: “We no longer grant, or take it for granted, that men doing the work of the world together are working for the world’s good, or that if they are working for the world’s harm they can be stopped. [...] The] stain of the atomic blood will not wash and that its fallout is nauseating us beyond medicine, aging us very rapidly” (Cavell, 1979: 62-63). Accordingly, and as a result of this existential doubt, Marrati writes: “What is broken with History is our *link* to the world, and the power of time in person will lead us nowhere if this link is not reestablished. Our skepticism is *ethical* [...]” (Marrati, 2003: 87).

What does this mean, this “ethical” scepticism? We have already seen that it is at least partially constituted by uncertainty surrounding the possibility of revolutionary change—a charge that would put Deleuze in agreement with Marcuse, if not Habermas and Feenberg. Moreover, it seems that this ethical scepticism is a symptom of a kind of *existential* scepticism ushered in by the tacit acknowledgement of a kind of Bergsonian monism. Having lost faith in our narratives, Deleuze argues—echoing Cavell’s claim that we can “no longer naturally establish conviction in our presentness to the world”

5 “What we may be witnessing is not just the end of the Cold War, or the passing of a particular period of postwar history, but the end of history as such: that is, the end point of mankind’s ideological evolution and the universalization of Western liberal democracy as the final form of human government. [...] The Battle of Jena marked the end of history because it was at that point that the *vanguard* of humanity (a term quite familiar to Marxists) actualized the principles of the French Revolution. While there was considerable work to be done after 1806—abolishing slavery and the slave trade, extending the franchise to workers, women, blacks, and other racial minorities, etc.—the basic principles of the liberal democratic state could not be improved upon. The two world wars in this century and their attendant revolutions and upheavals simply had the effect of extending those principles spatially, such that the various provinces of human civilization were brought up to the level of its most advanced outposts, and of forcing those societies in Europe and North America at the vanguard of civilization to implement their liberalism more fully” (Fukuyama, 1989).

(Cavell, 1979: 60)—that we have, as a corollary, lost faith in the things-in-themselves:

The link between man and the world is broken. Henceforth, this link must become an object of belief: it is the impossible which can only be restored within a faith. Belief is no longer addressed to a different or transformed world. Man is in the world as if in a pure optical and sound situation. The reaction of which man has been dispossessed can be replaced only by belief. Only belief in the world can reconnect man to what he sees and hears. The cinema must film, not the world, but belief in this world, our only link. The nature of the cinematographic illusion has often been considered. Restoring our belief in the world—this is the power of modern cinema (when it stops being bad). Whether we are Christians or atheists, in our universal schizophrenia, *we need reasons to believe in this world*. (Deleuze, 2005b: 166)

It is not that Deleuze thinks that the world is literally “gone”; he does not believe that it has died, effaced by our own collective sceptical disposition. Rather, our loss of the world acknowledges that the world is still *there*, but that we may no longer be possible to make sense of it sufficiently in order to begin life anew (Marrati, 2003: 89). As Deleuze and Guattari write in *What is Philosophy?*: “[It] is possible that the problem now concerns the one who believes in the world, [...] so as once again to give birth to new modes of existence [...]. It may be that believing in this world, in this life, becomes our most difficult task [...].” (Deleuze and Guattari, 1996: 74-75). The crisis of the action image is a crisis not only of *scepticism*—an acknowledgment of our fundamental inability to render narratives about the inevitability of human progress—but also introduces a modern problem of *nihilism*: that our uncertainties about the usefulness or relevance of lived narratives has engendered a kind of ontological crisis; a fear that the world is *without meaning*. Understood this way, it is interesting—and I think appropriate—that Marrati’s Deleuze starts to sound extremely *Heideggerian* with regards to the anxieties that are being articulated. In both cases there is a kind of suspicion or despair that the world has been denuded of meaning, of the capacity for mystery and epiphany. The unease we feel is both phenomenological and existential; no longer capable of *poiesis*, *Dasein*—our very *Being*—is endangered.

Not even the praxical knowledge offered by Allen’s artefactual epistemology offers a way out of this morass, for neither knowledge nor truth—at least according to Allen’s strictly anti-metaphysical pragmatism—are particularly special or impressive properties. If “truth”, as he argues, is nothing more than the right kind of superlative performance, it simply cannot sustain Being; indeed, it is unclear what kind of relationship exists between truth and Being except in the sense that they are both anchored to things in the world, viz.: the Heideggerian comparison between *Vorhandenheit* and

Zuhandenheit, and how both properties are instantiated in the same object. “Truth” and “knowledge” are not intrinsically valuable or powerful, according to an Allenian schema; insofar as they help us to live, it is only by providing palliation to make our lives easier. Indeed, even well before Allen published *Knowledge and Civilization*, this remained a common sentiment in his work; the closing lines of his early *Truth in Philosophy* read: “truth has no value apart from whatever is built, destroyed, sustained or impeded with what passes for true. Truth has no power of its own, no utopian potential, no affinity for good, and will not make us free” (Allen, 1993: 182). This is an important observation: the mere fact that something is epistemically satisfying does not tell us how we are to *live*, nor does it help us take the world seriously if we are the only concrete point of reference. To re-quote Heidegger: “Man [...] exalts himself to the posture of lord of the earth. In this way the impression comes to prevail that everything man encounters exists only insofar as it is his construct. This illusion gives rise to one final delusion: It seems as though man everywhere and always encounters only himself” (Heidegger, 1977b: 27).

Marrati and I do differ on one point, however. Although I am inclined to endorse her reading of Deleuze as articulating a kind of existential anxiety—even if it does rely rather heavily on those few passages where Deleuze refers explicitly to politics and lived experience (Sinnerbrink, 2011: 101–102)—I am not convinced of the emphasis that she places upon this existential despair being premised upon the (im)possibility of revolutionary political action. It is not that I think she is incorrect, *per se*; rather I believe that her analysis is incomplete by virtue of the fact that she seems unaware of the tangible effect that *technology* has had upon the development of this collective dispositional pessimism. We have already seen the deeply contingent relationship that holds between technics and contemporary political structures: not only does socio-politics influence the kinds of technology utilised (cf.: Feenberg’s discussion of the technological ramifications of rendering slavery illegal), but so too do technologies themselves bear relevantly upon the forms that these socio-political structures take.

Consequently, I argue that the crisis of the action-image—the “break” with the world that Deleuze poses—is just as much a product of post-Heideggerian technological concerns as it is a product of Frankfurt School political pessimism. Moreover, given the mutually contingent nature of socio-politics and technology, this relationship should not be unsurprising, for they are in some important respect complementary *symptoms* of the same fundamental ontological *disorder*: per our analysis that concluded CHAPTER 3, it is a fear that we have been unmoored from the things-in-themselves, that we have lost our sense of Being, and that our sense of agency and self-determination is under threat from social and epistemic sources of our own making. The crisis of the action-image is not only a crisis that ushers in a kind of “ethical” scepticism, *per Marrati*, but also a kind of ontological nihilism as the world is collapsed into an instrumental (and fundamentally Allenian) image.

5.2 *Renewing our Vows to the World*

If the Heideggerians are to be believed, our technology and its discontents have left us adrift in a universe without meaning. Sceptical of forms of knowing and convinced that the world has been eviscerated of our Being, our lived experience has become featureless, distanceless, *das Abstandlose*. We are confronted with the inescapable challenge of a Heideggerian world picture, which “does not mean a picture of the world but the world conceived and grasped as picture” (Heidegger, 1977a: 129). Despite the various proposals to help us address this anxiety as we discussed in CHAPTER 3, the overwhelming and catastrophic effects of the crisis of the action-image are felt too deeply. The world has been too effectively dehumanised and too effectively disenchanting as our technology occludes our sense of Being. With the things-in-themselves turned into an image—a instrumental set of raw physical data—we are no longer capable of experiencing genuine mystery or epiphany; particularly according to Heidegger and Borgmann, we cannot feel as if we are communing with the divine. Furthermore, although it is an error to feel this way (Allen is, I think, entirely correct in his assessment of the world-constituting nature of technological progress), our suspicion is defensible and justifiable; we are rightly anxious about being disappointed by our own narratives and our own belief in the world, particularly when our account of the world seems so *complete* and so replete with *facts*. But what other option do we have? Sceptics we might be, but we cannot afford to stop being part of the world; we must somehow deal with the problem of our own scepticism and reconcile ourselves, if only occasionally or momentarily, with living in a universe denuded of Being. We must adopt a certain sceptical *disposition*; a kind of ironic disbelief where it is possible to exist in the world without necessarily committing to it. Thomas Nagel on this topic, in his seminal essay “The Absurd”, writes:

Philosophical skepticism does not cause us to abandon our ordinary beliefs, but it lends them a peculiar flavor. After acknowledging that their truth is incompatible with possibilities that we have no ground for believing do not obtain—apart from grounds in those very beliefs which we have called into question—we return to our familiar convictions with a certain sense of irony and resignation. Unable to abandon the natural responses on which they depend, we take them back, like a spouse who has run off with someone else and then decided to return. (Nagel, 1971: 724)

So how is it possible for us to return to the world, to recommit to that inconstant spouse? As articulated in CHAPTER 3, we have remarkably little in the way of answers. Although all of those philosophers we discussed are happy to provide diagnoses of these existential problems, few actually commit to providing answers that exceed the bromidic or overly idealistic—if indeed an answer is provided at all. Beyond Heidegger’s exhortations to rediscover Being, or Marcuse’s utopian optimism in a Marxian revolution,

or Feenberg's cautious hopefulness about the power of human agency to materially affect technological outcomes, it is really only Borgmann who attempts to provide a muscular account of how we are *best to live* in a post-industrial and technologised era. Although there are deep problems with his account, we begin our concluding analysis with his work.

If we recall from CHAPTER 3.3, Albert Borgmann argues—in his specific spin on the problem of Heideggerian world-loss—that this ontological anxiety stems from the fact that we have lost or otherwise forgotten our true mode of being. We have been entirely subsumed within the *device paradigm*: a form of living not only characterised by the fact that those technologies that help constitute our forms of life have become invisible to us, but also characterised by the fact that *opting out* is not considered a desirable or coherent option: “[A] decision against technology or, more accurately, against technologically specified democracy is one against freedom simply and for prejudice, paternalism or totalitarianism” (Borgmann, 1984: 103). However, rather than pinning his hopes on the possibility of a Marcusean New Technology, Borgmann believes that we have lost—and must reattain—the right kinds of activities or *focal practices*. Although we are now able to extract clean, clear water from a spigot, thus more easily meeting our physical needs, we have lost the focal dimension of drawing water from a well: as I noted previously, Borgmann points out that Abraham's servant discovered the future wife of Isaac at a well, and a well was the location of the first kiss between Jacob and Rachel. When we interact with the world strictly instrumentally, we lose something of its significance and its character, as well as the fully plenary experience that would otherwise be available to us: “These features of physical engagement and of family relations are only first indications of the full dimensions of a thing's world. Physical engagement is not simply physical contact but the experience of the world through the manifold sensibility of the body” (Borgmann, 1984: 42).

Borgmann, unlike many of his post-Heideggerian colleagues, offers a deceptively simple answer to this perceived problem: given that we cannot return to the, in some senses, more desirable form of life that was available to us prior to the Industrial Revolution, it behoves us instead to forge and reliably observe new focal practices. Although Borgmann nominates religious observance as the focal practice *par excellence*, there is nonetheless something worshipful about all of the focal practices he nominates, even something as banal as a neighbourhood game of baseball: “A thoughtful and graceful ballpark tunes people to the same harmonies. It inspires common pride and pleasure, a shared sense of season and place, a joint anticipation of drama. [...] When reality and community conspire this way, divinity descends on the game, divinity of an impersonal yet potent kind” (Borgmann, 1992: 135). It is this idea of sharing: of sharing space, goals, victories, defeats; of feeling the spark of the divine—even of a secular kind—in the wonder of shared experience. It is worth re-quoting what is easily Borgmann's most beautiful passage on the subject:

Amidst the complication of conditions, of the *Bedingungen*, we must uncover the simplicity of things, of the *Dinge*. A jug, an earthen vessel from which we pour wine, is such a thing. It teaches us what it is to hold, to offer, to pour and to give. In its clay, it gathers for us the earth as it does in containing the wine that has grown from the soil. It gathers the sky whose rain and sun are present in the wine. It refreshes and animates us in our mortality. And in the libation it acknowledges and calls on the divinities. (Borgmann, 2003: 294-295)

However, Borgmann claims, not all shared experiences are created equal. Although he thinks there is a kind of ontological honesty to playing baseball, going on a long hike, making a meal from scratch, or paying deference to your god of choice, the fabric of contemporary life is compromised by a myriad of dishonest or “hyperreal” experiences: “This middle region of physical reality is divided today by the line between the real and the hyperreal. On the one side are things of commanding presence, continuous with the world; on the other, disposable and discontinuous experiences” (Borgmann, 1992:118). It is in this vein that, in *Crossing the Postmodern Divide*, Borgmann refers to “the cancerous growth of video culture” (Borgmann, 1992: 10)—a growth that is, as we observed earlier, due to the loss of “authentic” practices, and has engendered an era of *hyperactivity*, *hyperintelligence* and *hyperrealism* that he believes is synonymous with the postmodern age. Accordingly, Borgmann poses us a choice: we must decide “whether to proceed on the endless and joyless plain of hypermodernism or to cross over to another more real world” (Borgmann, 1992: 126).

General criticisms of this position have, of course, been made—such as in the case of Douglas Kellner’s essay on the subject⁶—criticisms that I will not repeat here. Rather, my dispute with Borgmann is rather specific: not that technically mediated experiences are or can be just as “authentic” (whatever that means) as non-mediated experiences, but rather that Borgmann entirely misunderstands the existential ramifications and effects of the “video culture” that he so aggressively denigrates. Of course he is, as I have argued in CHAPTER 4, correct in thinking that photographs, whether moving or still, are not world- or truth-bearing in any significant way: although a photographic image might have natural meaning with the world, the intentional complexity of photographs, as well as the fact that any kind of meaning or narrative we can derive from photographs is a kind of entirely non-natural testimony, means that the photograph cannot serve as a source of egocentric spatial information. However, he completely misses the fact that photographs are nonetheless *epistemically special*; the fact that they are

6 “[...] new technological modes of experience and interaction are just as real and life enhancing as conversation, gardening, taking a hike in the wilds, or caring for animals—examples positively valorized by Borgmann. I believe that Borgmann’s distinction between the real and hyperreal and his denigration of hyperreality are problematic, that we need to deconstruct such oppositions, and should see how new technologies make possible the sort of focal, life-enhancing experiences and activities that Borgmann himself calls for” (Kellner, 2000: 242-243).

ostensibly “simply the inevitable outcome of a certain series of events” (Snyder and Allen, 1975: 157) means that they *seem to us* as epistemically more reliable than forms of representation such as painting. Although a photograph might well confuse us by virtue of tracing the world in a misleading way, it is only our *testimony* of the trace that misleads; the trace itself makes no claims at all.

Of course, the curious thing is that we are misled—and willingly—by photographs all the time. When I watch a film in good faith, I am watching it with a certain kind of approach, armed with a certain disposition. I am assuming, within the boundary conditions set by my level of investment and subsequent enjoyment, that the events transpiring on the screen *are in fact the case*: this is what people mean when they say that they “suspend their disbelief”. It is because photographs are epistemically special by virtue of their automatically-rendered verisimilitude that we are happier to believe in them, even if what they are showing us is impossible—or, at the very least, highly improbable; whether it is due to conditioning or a genuine difference in ontological status, we are disposed to think of photographic images as traces, even in the event that they are testimonies (as in cases of post-production rotoscoping or CGI, for example). It is for this reason that, contra Borgmann’s claims, although we remain adrift in an entirely empty, senseless universe, the power of photography and cinema lies in the fact that it serves as an existential response to the epistemic *scepticism* and the ontological *nihilism* ushered in by our deeply strange relationship with our artefacts. Having lost our narratives and our myths to the crisis of the action-image, it is with the bizarre properties instantiated in photographs that we find ourselves once again able to renew our vows and to have faith in the world—and in new forms of living—once again: “We need an ethic or a faith, which makes fools laugh; it is not a need to believe in something else, but a need to believe in this world, of which fools are a part.” (Deleuze, 2005b: 167).

And so it is the case that Deleuze and Marrati claim that cinema (and, I would also argue, photography more broadly), is fundamentally *Catholic*, despite the acknowledged “strangeness” of the comparison (Marrati, 2003: 80). It should be noted: his is not only a kind of phenomenal comparison between the feeling of entering a cinema theatre and entering a cathedral, although there are undeniable parallels—a place of quiet and solitude, where stories are told, where popcorn or communion wafers serve as hosts to be consumed—but rather a comparison that appeals to the fact that both cinema and Catholicism *aspire towards universality*, toward “a becoming-world, that current processes of capitalism do not exhaust”; like Catholicism, cinema preserves the sense that “*the link between humans and the world is always at stake*” (Marrati, 2003: 80): “For the cinematographic image, in contrast to the theatre, showed us the link between the man and the world. Hence it developed either in the direction of a transformation of the world by man, or in the discovery of an internal and higher world that man himself was . . .” (Deleuze, 2005b: 165-166). Being arts “of the masses”, cinema

and photography bespeak a *catholic* (in both senses of the word) attempt to write new myths and new stories in a lived universe that is fundamentally hostile to both; a way to make sense of the senseless (Marrati, 2003: 80). Deleuze writes that “belief replaces knowledge only when it becomes belief in this world, as it is” (Deleuze, 2005b: 166); faced with an Allenian epistemic universe denuded of metaphysics, we are only sustained by belief when we once again find it within ourselves to *believe in the world*: we are only tethered to the things-in-themselves by the *possibility of hope*. Moreover, because of the unique properties of the photographic image, it is only in cinema and photography that these hopes are satisfyingly instantiated: these artefacts have become an expression of a kind of *faith*, and is “faith alone” that allows us to “forge the link anew and give us the world once again” (Marrati, 2003: 87).

Faith is no longer concerned with a heavenly sphere beyond life, but neither is it concerned with the project of a better world to come. The object of faith is not in a temporal beyond to be attained; belief no longer fills the wait with hope, thus making it acceptable. The new faith invests the world as it is, not to justify what is intolerable, but to make us believe that although the organic form of the link that attached us to the world is broken, the link itself is not broken, and other forms of it can still be invented. (Marrati, 2003: 86)

This is a key point: that, with the link to the world broken, we have to have the tools and the faith available to render *new kinds of narratives*, and it is the photographic image that affords us these tools. This is the point that both Deleuze and Cavell make in their books about cinema: that there is something inherently *mythic* about the technology that allows us to explore and express, perhaps, a new kind of faith in the world; they express the “idea and wish for the world recreated in its own image” (Cavell, 1979: 39). Marrati writes that this is the dimension of greatness to cinema after the crisis of the action image: the “capability to create other links.” She writes further: “Italian neorealism marks the appearance of pure optical and sound situations in cinema and of characters who are no longer ‘actors’ but seers, witness of a world that has become unthinkable *because* it has become intolerable—as intolerable in its immense injustices as in its daily banality” (Marrati, 2003: 85). Although the photographic or cinematographic image is very clearly not real, very obviously not the case—as I argued in CHAPTER 4—the fact that they *are* epistemically special, in that they *feel like* the case, is what makes them such remarkable vectors for our new myths; even when they are testimonies, they nonetheless manage to feel like traces. As Cavell writes, the “idea of and wish for the world recreated in its own image was satisfied *at last* by cinema”; even though this attribution or assumption is obviously and inherently false—it is what Bazin called the “myth of total cinema” (Bazin, 1967: 23-27)—the ontologically parasitic nature of the photographic image makes us feel that the world has been reflected *back at us*

by virtue of the *automatism* of the image (Sinnerbrink, 2011: 112). Cavell writes:

What is cinema's way of satisfying the myth? Automatically, we said. But what does that mean—mean mythically, as it were? It means satisfying it without *my* having to do anything, satisfying it by wishing. In a word, *magically*. I have found myself asking: How could film be art, since all the major arts arise in some way out of religion? Now I can answer: Because movies arise out of magic; from *below* the world. (Cavell, 1979: 39)

The mythic quality of cinema and photographs is given to us as if by *magic*; it is not an intellectual exercise of the application of knowledge and belief, but a deeper, almost visceral response to the demands made of us by the image. It is almost as if Cavell is describing something like the Barthesian *punctum*: whereas the merely formal qualities of the image—place, plot, characters, event; that is, the *studium*—nonetheless remain in service to the *punctum*, that aspect of the image that “rises from the scene, shoots out of it like an arrow, pierces me. [...] A photograph's *punctum* is that accident which pricks me (but also bruises me, is poignant to me)” (Barthes, 1981: 26-27). Although the comparison is imperfect, the metaphor nonetheless remains apt: although we are required to give an account for the relationship between the formal qualities—the testimonial or *reading* aspect of viewing—there is something deeper, more raw, something *below the world* that grabs our attention and forces us to take the image seriously.

I spoke in the very first chapter about how there is something in the photographs of Miss Atomic Bomb (FIGURE 19) that made those images feel *something* like the truth. Moreover, although we could provide a multitude of different accounts for why those images were taken, my argument is these accounts are in a sense divorced from why the image is compelling in the first place. Perhaps it was a grandiose gesture of American jingoism; a exercise in the kind of blinkered, belligerent nationalism that freely celebrates the deaths of opposing combatants. Or perhaps, although she is undeniably adorned in an icon of death—she is, after all, an *anthropomorphised mushroom cloud*—Miss Atomic Bomb is less a fetishisation of the Bomb's destructive potential than she seems to be actively participating in that uniquely American optimism about the Atomic Age. However, this is immaterial: if the photograph is an expression of the “idea of and wish for the world recreated in its own image”, whatever justification one would like to employ to account for her ghoulish semiotic baggage is secondary to the tacit, immediate and *mistaken* pre-theoretic belief or intuition that Miss Atomic Bomb exists in *our* universe. As Walter Benjamin notes in “A Small History of Photography”, there is something special or unique about this sense of sharing a world; there is “something that cannot be silenced, that fills you with an unruly desire to know what her name was, the woman who was alive there, who even now is still real and will never consent to be wholly absorbed in *art*” (Benjamin, 1979: 242-243). It is curious: although Benjamin wrote that comment in response to the image of an

entirely different woman—a photograph taken by 19th century photography David Octavius Hill—it seems fair to think that his comment could be about *any* women in *any* photograph; photography’s aspiration to universality seen in action.

So why do we have this bizarre intuition? What is it about the photographic image that forces us to once again have faith in the world, even if we really have no good reason to do so? Cavell, for his part, argues that this faith in the magically provided image is fundamentally a product of the fact that photographic images, in their *seeming* to be transparent, presenting or reflecting to us the world, convince us of our own *invisibility*. They are not “literally presenting us with the world”, but permit us “to view the world unseen”. Cavell writes that it is the same kind of power afforded to Gyges in his eponymous myth: not a “power over creation [. . .], but a wish not to need power, not to have to bear its burdens” (Cavell, 1979: 40). The ontological ramifications of a performative, artefactual epistemology have left us uncertain of the world beyond our capacity to instrumentalise it; to again quote Allen: “The end of human life is the end of the world, beyond which is—*nothing*. Human existence and activity make a world where otherwise there is—*nothing*. Kick a stone if you like. Slap the table if it helps. That does not prove that in the absence of human beings such a thing as a stone or a star *exists*” (Allen, 2005: 30). Although this certainly seems like the case, it leaves us ontologically adrift; how are we able to access the world artlessly, without mediation? Allen would claim that it is impossible, and I am inclined to agree even if it leaves us ontologically dissatisfied or unsettled, as the Heideggerians claim. However, the photographic image lulls us into an important—even beneficial—cognitive error: despite our inability to justify the intuition, we feel as if we have been presented to the world as if *unseen*. We *feel* as if we are invisible to the world just as the world is made visible to us; we *feel* as if the experience is non-instrumentalised, unmediated and honest.

[...] the photographic exigency that interpellates us has nothing aesthetic about it. It is, rather, a demand for redemption. The photograph is always more than an image: it is the site of a gap, a sublime breach between the sensible and the intelligible, between copy and reality, between a memory and a hope. (Agamben, 2007: 26)

I believe it is for this reason that, as Agamben observes in his essay “Judgement Day”, there is something of the Day of Wrath in the photograph; a sense that “everything that happens” in a photograph—from the universally significant to the mind-numbingly jejune—is “called forth, summoned to appear on Judgement Day” (Agamben, 2007: 23). We should be forgiven if Agamben’s intention is not entirely clear, but he presents an illustrative example to help us. In 1838, Louis Dageurre, using his eponymous machine, captured an image of the Boulevard du Temple, one of the main thoroughfares in Paris, at a particularly busy moment in the middle of the day



Figure 19: Lee Merkin as Miss Atomic Bomb, 1957. Source: Las Vegas News Bureau



Figure 20: Louis Daguerre, *Boulevard du Temple*, 1838

(FIGURE 20). Having been taken some decades before the advent of the automobile, one would reasonably expect to see the street bustling with foot traffic and the street thick with horse-drawn carriages. Instead, the street is entirely empty; it is as if the world has been washed clean of humanity. That is, of course, with one exception: whereas, due to the extremely long exposure time, all of the other human beings in the photograph evaporate into a faint smear on the footpaths, there is in the bottom left corner, a man with his foot resting on a stool, having his shoe shined—the very first photograph of a human being.

Agamben writes that he “could not have invented” a more appropriate image of the Last Judgement, because it is in appearing to capture this slightly ridiculous gesture—the man’s foot pointing daintily, like a horse performing in dressage—that the significance of that moment becomes obvious. Although it is the case that “photographs contain an unmistakable historical index, an indelible date”, he highlights the fact that there is something else in the photographed gesture; that this index “now refers to another time, more actual and more urgent than any chronological time” (Agamben, 2007: 25). The photograph operates as a kind of supreme, almost Messianic moment; it is an instance wherein we feel the real world and the world of our mediated perceptions to align in some important and vital sense. This man’s silly, banal gesture (standing tall, leg cocked imperiously) “is now charged with the weight of an entire life”; in that single photographic moment, like all photographic moments, is condensed “in itself the meaning of an entire existence” (Agamben, 2007: 24). There is something of Stiegler’s analysis here: although our relationships with our artefacts generally leave us in a privative relationship with immortality (“[...] the Immortals, always present in their distance, a proximity nevertheless forever withdrawn”

[Stiegler, 1998: 190]), it is with the photographic image that we are offered a *god's-eye view*. Prior to the invention of the daguerrotype, our mortality “appears through its relation to immortals for whom it erects temples and fashions images” (Stiegler, 1998: 195); however, with the introduction of the photographic image we are no longer required to *fashion* images, for we can see the world *as the gods would*. Observing the world as if by magic, removed from the normal state of affairs, we are find ourselves privileged by virtue of being displaced from the facts of the matter: “Photography demands that we remember all this, and photographs testify to all those lost names, like a Book of Life that the new angel of the apocalypse—the angel of photography—bolds in his hands at the end of all days, that is, every day” (Agamben, 2007: 27). And so it is that Cavell writes:

In viewing films, the sense of invisibility is an expression of modern privacy or anonymity. It is as though the world's projection explains our forms of unknownness and of our inability to know. The explanation is not so much that the world is passing us by, as that we are displaced from our natural habitation within it, placed at a distance from it. The screen overcomes our fixed distance; it makes displacement appear as our natural condition. (Cavell, 1979: 40-41)

Photographs, therefore, are a kind of response to the crisis of belief that follows the disintegration of the action-image—the instrumentalisation of our lifeworlds. As Robert Sinnerbrink notes, this capacity for photographs and cinema to project, to *give us*, the world “parallels, but also questions, our modern sceptical orientation; our ‘inability to know’ ourselves, others, or the world”. The photographic image displaces us from the world by virtue of making us invisible, as if able to watch it and the things that constitute it from a distance; it naturalises our “condition of existential displacement from our environment, rendering it *meaningful, even pleasurable*” (Sinnerbrink, 2011: 112, emphasis mine). These images are pleasurable because they respond to, and momentarily address, our existential fear that the world has been lost to us. It is for these reasons, returning to Borgmann, that the viewing of photographic images does in fact constitute the *exact* kind of focal practice that he valorises. Although Heidegger laments the ushering in of the age of the world picture because he fears that our ontotheological bias will render the world instrumental, disenchanted, as if entirely *for us*, it is actually in the photograph and the film that *Dasein* rediscovers the possibility of epiphany, of transformation. When we see a photographic projection, it no longer “seems as though man everywhere and always encounters only himself” (Heidegger, 1977b: 27); rather we see a world *for itself*, to which we are invisible and unable to affect. The photograph shows us a world where the stuff of the world returns once again to being *things* rather than mere *objects*; they are invested with significance and power, subject to their own internal and essential qualities and functions, thereby constituting a universe “in which human beings are not on-

tologically favoured over the rest of nature, in which objects are not props but natural allies (or enemies) of the human character” (Cavell, 1979: 37).

It is a curious thing: of all of the post-Heideggerian theorists we discussed, it is perhaps Andrew Feenberg who is closest to the truth. For the photograph is evidence of exactly the kind of process that he describes: when he writes about how an analysis of games like Go rightly casts doubt upon Habermas’ story of technological determinism and neutrality, it is because Go is an example of a practice where “ambiguity has been removed from the field of play”, as well as enforcing “the artificial equalisation of the players who, in everyday life, are sure to be subtly differentiated in ways the game ignores” (Feenberg, 1995: 112-113). Practices such as Go are constituted by a set of behaviours which are strictly formal and not subject to contingent facts; as I wrote in CHAPTER 3.2, whether or not the Go board is on a cruise ship, a sub-arctic island or a lava field will not bear relevantly upon the means by which the game is played. However, in spite of these facts, the game ends up being saddled with all manner of existential and aesthetic baggage; how one *plays the game* is anything but incidental to the practice. Now photography, per philosophers like Scruton, seems to be not dissimilar in many important respects. It seems to us to be a merely mechanistic image-producing process, denuded of intention and able to accurately capture the world because of that fact. However, in spite of the observation that it *seems* to be like those Habermasian “characteristics of modern science and technological rationality” (Achterhuis, 2001: 82 and Feenberg, 1995: 113), it provides a necessary and significant service. The photograph, the “epistemically special” object, has been integrated into our lifeworlds in a way that is as important as it was unexpected; in an example of what Feenberg calls “secondary instrumentation”, the the photographic image has been repurposed in such a way as to be existentially satisfying; whereas the loss of myths and grand narratives guarantees that photographic image cannot tell us how to live, it does nonetheless show us the possibility of having *lives worth living*, that our actions can be “inscribed within a horizon of possible meaning” (Marrati, 2003: 79).

Borgmann is suspicious of “video culture” because he fears that it is hyperreal, and in a sense he is correct. For the photographic universe is one with which we feel that we have otherwise lost touch; as our old forms of life recede from us inexorably, it is our only reminder that we once felt things to be animated with spirit. He fails to realise—or perhaps fails to appreciate—that the unique properties of the photographic image show to us a world in which burning bushes speak to shepherds looking for lost sheep; wherein herds of swine speak with the tongues of demons; where men of rude countenance and humble origins can perform miracles and reveal themselves as the son of God. Moreover, the mythic properties of cinema provide us with shared narratives in a world that has been atomised by the instrumental, performative application of our technology. Error though it is, experiencing photographic images allows us to once again feel as if the world has *substance*; as if the Being that we feel has been stripped from it

has been reinstated and reinstantiated. Pushed away from with the world by scepticism, we return to it with a very particular kind of faith, armed with a very particular kind of artefact: the photograph. Although the gods have been lost to us, never to return, photographic images—our machines for living—provide us with the means to once again acknowledge and call upon the divinities.

6

FINALE: RIBBONS OF DREAMS

What are we to do with our imaginations? Love them and believe in them to the point of having to destroy and falsify them (perhaps this is the meaning of Orson Welles' films). But when, in the end, they reveal themselves to be empty and unfulfilled, when they show the nullity of which they are made, only then can we pay the price for their truth and understand that Dulcinea—whom we have saved—cannot love us. (Agamben, 2007: 93-94)

We conclude this work with a summation of our findings this far, beginning with the commencement of our analysis in CHAPTER 2. I began with a defence of a very specific kind of epistemic approach, as developed by Barry Allen in his *Knowledge and Civilization* and, to a lesser extent, *Artifice and Design*. Postulating that traditional sentential or propositional—that is to say, linguistic—epistemological systems were inadequate to the task of adequately explaining the internal processes of design, I argued that knowledge was instead best characterised as a kind of intentional performance. Moreover, this intentional performance need not have a strict outcome in mind for it to be an expression of knowledge; invoking David Pye and drawing a type-token distinction between types of objects and individual instances of objects, I claimed that one need not be in possession of the final form of an artefact (understood loosely) for the performance to be knowledgeable—a concept that seems *prima facie* incompatible with sentential or propositional theories of knowledge. Building upon that assumption, I then engaged in an historical analysis of the evolution of tool use in hominins, first pointing out that intentional, knowledgeable tool use in hominins predates the development of language by over two million years. Subsequently I argued, via the work of Roy Rappaport and other anthropologists, that the capacity for intentional tool use is a necessary precondition for the development of language, before arguing, via Allen, that “knowledge” should be best understood as a “superlative artefactual performance” rather than being premised upon a linguistic faculty. After providing an extensive justification for this claim, I then proposed a method of parsing the relationship that Allen’s artefacts hold with the world, arguing that they are an irreducibly emergent property of the facts of the matter by virtue of the fact that they are *naturally* supervenient effects that are contingent upon but *not deducible from* lower-level phenomena. Consequently, Allen’s epistemology indicates that we can only imperfectly access the world just as we are categorically incapable of providing a complete account of the global A-facts even were we in possession of a complete account of our B-facts—that is, our artefacts. As a result, it seems obvious that the irreducibly emergent nature of our

artefacts presents an excellent reason as to why it is impossible in Allen's view to attain any kind of complete or unambiguous picture of the world beneath the artefacts—impossible, even, to make contact with the Real in any significant, non-attenuated way.

Thereafter, in CHAPTER 3 I argued that, despite this being the case—that is, that our artefacts are world-constituting—we are nonetheless suspicious of an overly technologised world; we find it existentially problematic. Tracing a thread from Martin Heidegger, through Herbert Marcuse, Jürgen Habermas and Andrew Feenberg, and then onto Alfred Borgmann and Don Ihde, I explored the various forms that this anxiety has adopted, as well as the proposed means of addressing the problem. Consequently, I concluded CHAPTER 3 with an analysis of Bernard Steigler and a reintroduction of Heidegger, arguing that technology poses two nested concerns. The first, I claimed, is that we fear that technology is denuding us of our agency; as the accelerating complexity of our world renders it opaque to us, we are forced to consider the possibility of a future wherein we are stripped of the possibility of meaningful social or political action. The second fear, moreover, is a kind of expansion upon the first: whereas the first fear is a response to the changing character of lived experience, the second poses the idea that technology has the potential to change the kinds of beings *that we are*. We have become sceptical of the world's authenticity as our experiences grow more mediated, and this has subsequently introduced a kind of inescapable ontological nihilism: we fear that we are losing our sense of ourselves as we confront the possibility of a world without meaning.

It is in CHAPTER 4 that I introduced the photographic image to the picture. Beginning with an overview of analytic philosophy of photography, I demonstrated why certain prevailing theories—particularly what is known as the “transparency thesis”—are premised upon a misunderstanding of the relationship that photographs have with the world. Subsequently, I engaged in a substantive analysis of the moving parts of the photographic image—photographer, camera, thing-in-itself, photograph and viewer—explaining the deeply contingent skein of intentional and automatic relations that hold between parts. Then, building upon that analysis, I explained why looking at a photograph of an object is not equivalent to looking *at* an object due to the absence of egocentric spatial information; although we might reasonably say that a photograph naturally means the world, our account of that data is entirely non-natural. Despite our sentiments and beliefs to the contrary, there are no “facts” in a photograph; without some kind of intelligible narrative—some non-natural account—photographs say nothing to us. They are information-carrying in the sense that they provide us with visual data in a manner that is more reliable than painting, and they are “epistemically special” for this fact. However, this visual data does not itself comprise a fact or a field of facts; the data must be received, sorted, parsed and then narrativised in order for us to make sense of it, denuded as the image is of egocentric spatial information.

Finally, CHAPTER 5 is the section in which I tied together these disparate threads. Accordingly, I argued that it is the epistemic specialness of photographic images, both moving and still, that provides a means of bridging both the unapologetic pragmatism of Allen's analytic philosophy of technology and the existential anxiety of Heideggerian philosophy of technology. Using the scholarship of Gilles Deleuze, Paola Marrati, Stanley Cavell and Robert Sinnerbrink, and with specific reference to Deleuze's crisis of the action-image, I claimed that photographs, by virtue of their presumed indexicality (and thus presumed veridicality) serve as a panacea to the existential doubts expressed by post-Heideggerian philosophers of technology. Unlike other kinds of image—indeed, entirely unlike other kinds of objects in general—photographic images, whether moving or still, force us to recommit to the world in a serious and substantive way. The truth or falsity of the contents of these images is irrelevant, because the power of photographs is not contingent upon us *believing* that the contents of the image are indeed the case; rather, because they seem to capture a glimpse of the world, we are forced to *take the world seriously* by virtue of our pre-theoretic intuitions about the relationship that holds between photographs and the things-in-themselves. Finally, I argued, photographs in short are machines for living—mere heuristic solutions to our epistemic scepticism and ontological nihilism, but no less remarkable for the fact.

BIBLIOGRAPHY

Achterhuis, Hans

- 2001 “Andrew Feenberg: Farewell to Dystopia”, in *American Philosophy of Technology: The Empirical Turn*, ed. by Hans Achterhuis, Indiana University Press.

Adams, Henry

- 2008 *The Education of Henry Adams*, Oxford University Press.

Agamben, Giorgio

- 2007 *Profanations*, ed. by Jeff Fort, Zone Books.

Agger, Ben

- 1976 “Marcuse & Habermas on New Science”, *Polity*, 9, 2, pp. 158–181.

Allen, Barry

- 1993 *Truth in Philosophy*, Harvard University Press.

- 2004 “The Ubiquitous Artifact: On Coherence”, *New Literary History*, 35, 2, pp. 259–271.

- 2005 *Knowledge and Civilization*, Westview Press.

- 2006 “Prometheus and the Muses: On Art and Technology”, *Common Knowledge*, 12, 3, pp. 354–378.

- 2008a “A More Laudable Truthfulness”, *Common Knowledge*, 14, 2.

- 2008b *Artifice and Design: Art and Technology in Human Experience*, Cornell University Press.

Arendt, Hannah

- 1998 *The Human Condition*, Chicago University Press.

- 2000 “Labor, Work, Action”, in *The Portable Hannah Arendt*, Penguin Classics.

Aristotle

- 1941 *The Basic Works of Aristotle*, ed. by Richard McKeon, R. P. Hardie, and R. K. Gaye, Oxford University Press.

- 1944 *Aristotle in 23 Volumes*, ed. by H. Rackham, Harvard University Press, vol. 21.

Armstrong, Carol

- 2012 “Automatism and Agency Intertwined: A Spectrum of Photographic Intentionality”, *Critical Inquiry*, 38, 4, pp. 705–726.

Arnheim, Rudolf

- 1969 *Visual Thinking*, University of California Press.

- Arnheim, Rudolf
 1974 "On the Nature of Photography", *Critical Inquiry*, 1, 1, pp. 149–161.
- Ayer, A. J.
 1936 *Language, Truth and Logic*, Victor Gollancz.
- Bailey, Lee
 1989 "Skull's Darkroom: The *Camera Obscura* and Subjectivity", *Philosophy and Technology*, 6, pp. 63–79.
- Barthes, Roland
 1981 *Camera Lucida: Reflections on Photography*, ed. by Richard Howard, Hill and Wang.
- Bazin, André
 1967 "The Myth of Total Cinema", in *What is Cinema*, University of California Press.
- Bazin, André and Hugh Gray
 1960 "The Ontology of the Photographic Image", *Film Quarterly*, 13, 4, pp. 4–9.
- Beardsley, Monroe
 1958 *Aesthetics*, Harcourt, Brace and World.
- Bedau, Mark
 1997 "Weak Emergence", in *Philosophical Perspectives: Mind, Causation, and World*, ed. by J. Tomberlin, Blackwell, vol. 11, pp. 375–339.
- Benjamin, Walter
 1979 "A Small History of Photography", in *One-Way Street and Other Writings*, ed. by Edmund Jephcott and Kingsley Shorter, NLB.
- Bennett, K.
 2003 "Why the Exclusion Problem Seems Intractable, and How, Just Maybe, to Tract It", *Noûs*, 37, 3, pp. 471–497.
- Bermúdez, José Luis
 2003 *Thinking Without Words*, Oxford University Press.
- Boesch, Chrisophe and Hedwige Boesch
 1981 "Sex Differences in the Use of Natural Hammers by Wild Chimpanzees: A Preliminary Report", *Journal of Human Evolution*, 10, pp. 585–593.
- Borgmann, Albert
 1984 *Technology and the Character of Contemporary Life: A Philosophical Inquiry*, University of Chicago Press.
 1992 *Crossing the Postmodern Divide*, University of Chicago Press.
 1995 "Information and Reality at the Turn of the Century", *Design Issues*, 11, 2, pp. 21–30.

Borgmann, Albert

- 2000 "The Moral Complexion of Consumption", *Journal of Consumer Research*, 26, 4, pp. 418–422.
- 2003 "Focal Things and Practices", in *Philosophy of Technology: The Technological Condition*, ed. by Robert C. Scharff and Val Dusek, Blackwell, pp. 293–314.
- 2006 "Technology as a Cultural Force: For Alena and Griffin", *The Canadian Journal of Sociology*, 31, 3, pp. 351–360.

Broad, C. D.

- 1925 *The Mind and Its Place in Nature*, Routledge & K. Paul.

Bull, Malcolm

- 2005 "The Limits of the Multitude", *New Left Review* [Sept. 2005], pp. 19–29.

Burkert, Walter

- 1983 *Homo Necans: The Anthropology of Ancient Greek Sacrificial Ritual and Myth*, ed. by Peter Bing, University of California Press.

Campbell, Jan

- 2005 *Film and Cinema Spectatorship: Melodrama and Mimesis*, Polity Press.

Carnap, Rudolf

- 1967 *Pseudoproblems in Philosophy*, ed. by Rolf A. George, University of California Press.

Carroll, Noël

- 1995 "Towards an Ontology of the Moving Image", in *Philosophy and Film*, ed. by C. A. Freeland and T. E. Wartenburg, Routledge, pp. 68–85.
- 1996 *Theorizing the Moving Image*, Cambridge University Press.
- 2000 "Photographic Traces and Documentary Films: Comments for Gregory Currie", *The Journal of Aesthetics and Art Criticism*, 58, 3, pp. 303–306.

Carter, Brandon

- 1974 "Large Number Coincidences and the Anthropic Principle in Cosmology", in *IAU Symposium 63: Confrontation of Cosmological Theories with Observational Data*, Reidel, pp. 291–298.

Cason, H.

- 1932 "The Learning and Retention of Pleasant and Unpleasant Activities", *Archives of Psychology*, 134.

Cavell, Stanley

- 1979 *The World Viewed*, Harvard University Press.
- 1998 *Must We Mean What We Say?*, Cambridge University Press.

Chalmers, David

1996 *The Conscious Mind: In Search of a Fundamental Theory*, Oxford University Press.

2006 “Strong and Weak Emergence”, in *The Re-emergence of Emergence*, Oxford University Press.

Chandler, Raymond

1992 *The Long Kiss Goodbye*, Vintage.

Chomsky, Noam

1996 *Powers and Prospects: Reflections on Human Nature and the Social Order*, South End Press.

Clarke, Melissa

2004 “Review: Bodies in Technology”, *The Journal of Speculative Philosophy*, 18, 4, pp. 339–341.

Cleve, James Van

1990 “Mind-Dust or Magic? Panpsychism Versus Emergence”, *Philosophical Perspectives*, 4, pp. 215–226.

Cohen, Jonathan and Aaron Meskin

2004 “On the Epistemic Value of Photographs”, *The Journal of Aesthetics and Art Criticism*, 62, 2, pp. 197–210.

Corning, Peter

2002 “The Re-Emergence of “Emergence”: A Venerable Concept in Search of a Theory”, *Complexity*, 7, 6.

Costello, Diarmuid

2008 “On the Very Idea of a ‘Specific’ Medium: Michael Fried and Stanley Cavell on Painting and Photography as Arts”, *Critical Inquiry*, 34, 2, pp. 274–312.

2012 “Automat, Automatic, Automatism: Rosalind Krauss and Stanley Cavell on Photography and the Photographically Dependent Arts”, *Critical Inquiry*, 38, 4, pp. 819–854.

Costello, Diarmuid and Margaret Iverson

2012 “Introduction: Photography between Art History and Philosophy”, *Critical Inquiry*, 38, 4, pp. 679–693.

Cowie, Peter

1973 *A Ribbon of Dreams: The Cinema of Orson Welles*, Barnes.

Crane, Tim

2001 “The Significance of Emergence”, in *Physicalism and Its Discontents*, ed. by C. Gillett and B. Loewer, Cambridge University Press.

Crary, Alice and Rupert J. Read

2000 *The New Wittgenstein*, Psychology Press.

Curran, Tim and Jeanne Doyle

- 2011 “Picture Superiority Doubly Dissociates the ERP Correlates of Recollection and Familiarity”, *Journal of Cognitive Neuroscience*, 23, 5, pp. 1247–1262.

Currie, Gregory

- 1991 “Photography, Painting, and Perception”, *The Journal of Aesthetics and Art Criticism*, 49, pp. 23–29.
- 1995 *Image and Mind: Film, Philosophy and Cognitive Science*, Cambridge University Press.
- 1999 “Visible Traces: Documentary and the Contents of Photographs”, *The Journal of Aesthetics and Art Criticism*, 57, 3, pp. 285–297.
- 2000 “Preserving the Traces: An Answer to Noël Carroll”, *The Journal of Aesthetics and Art Criticism*, 58, 3, pp. 306–308.

Davidson, Donald

- 1963 “Actions, Reasons, and Causes”, *The Journal of Philosophy*, 60, 23 [Nov. 1963], pp. 685–700.
- 1967 “Truth and Meaning”, *Synthese*, 17.
- 1980 “Agency”, in *Essays on Actions and Events*.

Deleuze, Gilles

- 1994 *Difference and Repetition*, ed. by Paul Patton, Columbia University Press.
- 2005a *Cinema 1: The Movement-Image*, ed. by Hugh Tomlinson and Barbara Habberjam, Continuum.
- 2005b *Cinema 2: The Time-Image*, ed. by Hugh Tomlinson and Robert Galeta, Continuum.

Deleuze, Gilles and Félix Guattari

- 1996 *What is Philosophy?*, ed. by Hugh Tomlinson, Columbia University Press.
- 2004 *A Thousand Plateaus: Capitalism and Schizophrenia*, ed. by Brian Massumi, Continuum.

Dennett, Daniel

- 1991 *Consciousness Explained*, Little, Brown & Co.

Derrida, Jacques

- 1998 *Of Grammatology*, ed. by Gayatri Chakravorty Spivak, Johns Hopkins University Press.

Diamond, Jared

- 2006 *The Third Chimpanzee: The Evolution and Future of the Human Animal*, Harper Perennial.

Dodd, James

- 1996 “Phenomenon and sensation: A reflection on Husserl’s concept of *Sinnggebung*”, *Man and World*, 29, 419–439.

Dretske, Fred I.

1981 *Knowledge and the Flow of Information*, MIT Press.

Dummett, Michael

1978 *Truth and Other Enigmas*, Duckworth.

1991 *Frege: Philosophy of Mathematics*, Harvard University Press.

Eliasmith, C.

2008 “Dynamics, Control and Cognition”, in *Cambridge Handbook of Situated Cognition*, ed. by M. Aydede and P. Robbins, Cambridge University Press, pp. 134–154.

Ellul, Jacques

1964 *The Technological Society*, ed. by John Wilkinson, Knopf.

Enfield, N. J.

2010 “Without Social Context?”, *Science*, 329, pp. 1600–1601.

Feenberg, Andrew

1990 “The Ambivalence of Technology”, *Sociological Perspectives*, 33, 1, pp. 35–50.

1991 *Critical Theory of Technology*, Oxford University Press.

1995 “Alternative Modernity? Playing the Japanese Game of Culture”, *Cultural Critique*, 29, pp. 107–138.

1996 “Marcuse or Habermas: Two Critiques of Technology”, *Inquiry*, 39, 45–70.

1999 *Questioning Technology*, Routledge.

2000 “Do We Need a Critical Theory of Technology? Reply to Tyler Veak”, *Science, Technology and Human Values*, 25, 2, pp. 238–242.

2002 *Transforming Technology: A Critical Theory Revisited*, Oxford University Press.

2003a “Critical Evaluation of Heidegger and Borgmann”, in *Philosophy of Technology: The Technological Condition*, ed. by Robert C. Scharff and Val Dusek, Blackwell, pp. 327–338.

2003b “Democratic Rationalisation: Technology, Power, and Freedom”, in *Philosophy of Technology: The Technological Condition*, ed. by Robert C. Scharff and Val Dusek, Blackwell, pp. 652–665.

Fisher, Eran

2007 “‘Upgrading’ Market Legitimation: Revisiting Habermas’s ‘Technology as Ideology’ in Neoliberal Times”, *Fast Capitalism*, 2, 2.

Fukuyama, Francis

1989 “The End of History?”, *The National Interest* [June 1989].

Gilles, Bertrand

1978 *Histoire des techniques*, Gallimard, Encyclopédie de la Pléiade.

Goldman, Alan

- 1990 “Natural Selection, Justification and Inference to the Best Explanation”, in *Evolution, Cognition and Realism: Studies in Evolutionary Epistemology*, University Press of America.

Goldsmith, Edward

- 1988 *The Great U-Turn: De-Industrializing Society*, Green Books.

Goodall, Jane

- 1997 “Transferred Agencies: Performance and the Fear of Automatism”, *Theatre Journal*, 49, 4, pp. 441–453.

Goodman, Nelson

- 1976 *Languages of Art: An Approach to a Theory of Symbols*, 2nd ed., Hackett Publishing Co.

Gould, Steven Jay

- 1989 *Wonderful Life: The Burgess Shale and the Nature of History*, Norton.
2002 *The Structure of Evolutionary Theory*, Harvard University Press.

Grudin, Robert

- 2010 *Design and Truth*, Yale University Press.

Haber, Heinz

- 1956 *Our Friend the Atom*, Golden Press.

Habermas, Jürgen

- 1971 *Knowledge and Human Interests*, Beacon Press.
1987 *Toward a Rational Society*, Polity Press.

Hacking, Ian

- 1983 *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science*, Cambridge University Press.

Hamilton, Maryellen and Lisa Geraci

- 2006 “The Picture Superiority Effect in Conceptual Implicit Memory: A Conceptual Distinctiveness Hypothesis”, *The American Journal of Psychology*, 119, 1, pp. 1–20.

Haraway, Donna

- 1991 “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century”, in *Simians, Cyborgs and Women: The Reinvention of Nature*, Routledge.

Hare, R. M.

- 1984 “Supervenience”, *Aristotelian Society Supplementary Volume*, 58, pp. 1–16.

Harman, Graham

- 2009 “Technology, Objects and Things in Heidegger”, *Cambridge Journal of Economics*, 34, 1, pp. 17–25.

Harris, Roy

- 1990 *Language, Saussure, and Wittgenstein: How to Play Games With Words*, Routledge.

Hauser, Marc, Noam Chomsky, and William Fitch

- 2002 “The Faculty of Language: What Is It, Who Has The Faculty of Language: What Is It, Who Has It, and How Did It Evolve”, *Science*, 298, pp. 1569–1579.

Heidegger, Martin

- 1962 *Being and Time*, ed. by J. Macquarrie and E. Robinson, Harper and Row.
- 1971 “The Thing”, in *Poetry, Language, Thought*, ed. by Albert Hofstadter, Harper and Row.
- 1977a “The Age of the World Picture”, in *The Question Concerning Technology and Other Essays*, ed. by William Lovitt, Harper Torchbooks, chap. 5, pp. 115–154.
- 1977b “The Question Concerning Technology”, in *The Question Concerning Technology and Other Essays*, ed. by William Lovitt, Harper Torchbooks, chap. 1, pp. 3–35.
- 1994 “Einblick in das was ist”, in *Bremer und Freiburger Vortrage*, Klostermann.
- 1995 *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude*, ed. by William McNeill and Nicholas Walker, Indiana University Press.

Hilpinen, Risto

- 1993 “Authors and Artifacts”, *Proceedings of the Aristotelian Society*, 93, pp. 155–178.

Hofstadter, Douglas

- 1982 “Can Creativity be Mechanised?”, *Scientific American*, 247.

Horkheimer, Max and Theodor W. Adorno

- 2002 *Dialectic of Enlightenment: Philosophical Fragments*, ed. by Gunzelin Schmid Noerr and Edmund Jephcott, Stanford University Press.

Hume, David

- 1875 “Of the Standard of Taste”, in *The Philosophical Works of David Hume*, ed. by T. H. Green and T. H. Rose, Longman, Green, vol. 3.
- 1975 “An Enquiry concerning the Principles of Morals”, in *Enquiries concerning Human Understanding and concerning the Principles of Morals*, ed. by L. A. Selby-Bigge and P. H. Nidditch, Clarendon Press.

Husserl, Edmund

- 1981a “Foundational Investigations of the Phenomenological Origin of the Spatiality of Nature: The Originary Ark, the Earth, Does Not Move”, in *Shorter Works*, University of Notre Dame Press, pp. 222–223.

Husserl, Edmund

- 1981b “Pure Phenomenology: Its Method and Its Field of Investigation”, in *Shorter Works*, University of Notre Dame Press, pp. 10–17.
- 1983 *Ideas Pertaining to a Pure Phenomenology and to a Phenomenological Philosophy*, Kluwer.

Ihde, Don

- 1990 *Technology and the Lifeworld*, Indiana University Press.
- 2000 “Epistemology Engines”, *Nature*, 406, p. 21.
- 2002 *Bodies in Technology*, University of Minnesota Press.
- 2003 “A Response to My Critics”, *Techné*, 7, 2, pp. 110–117.

Ihde, Don and Evan Selinger

- 2004 “Merleau-Ponty and Epistemology Engines”, *Human Studies*, 27, pp. 361–376.

Illich, Ivan

- 1973 *Tools for Conviviality*, Harper and Row.

Janecke, Christian

- 1995 *Kunst und Zufall: Analyse und Bedeutung*, Verlag für moderne Kunst.

Jenkins, Richard

- 2000 “Disenchantment, Enchantment and Re-Enchantment: Max Weber at the Millenium”, *Max Weber Studies*, 1, pp. 11–32.

Jung, Carl

- 1964 *Man and His Symbols*, Garden City.

Kaczynski, Theodore John

- 2008 *The Unabomber Manifesto: Industrial Society and Its Future*, Wingspan Classics.

Kawabata, Yasunari

- 2006 *The Master of Go*, Random House.

Kellner, Douglas

- 2000 “Crossing the Postmodern Divide with Borgmann, or Adventures in Cyberspace”, in *Technology and the Good Life?*, ed. by Eric Higgs, Andrew Light, and David Strong, University of Chicago Press.

Kim, Jaegwon

- 1992 “‘Downward Causation’ in Emergentism and Nonreductive Physicalism”, in *Emergence or Reduction?*, ed. by A. Beckermann, H. Flohr, and Jaegwon Kim, Walter de Gruyter.
- 1993a “Concepts of Supervenience”, in *Supervenience and Mind: Selected Philosophical Essays*, Cambridge University Press, pp. 53–78.
- 1993b “‘Strong’ and ‘Local’ Supervenience Revisited”, in *Supervenience and Mind: Selected Philosophical Essays*, Cambridge University Press, pp. 79–91.

Kim, Jaegwon

- 1999 “Making Sense of Emergence”, *Philosophical Studies*, 95, pp. 3–36.
 2006a “Being Realistic About Emergence”, in *The Re-Emergence of Emergence*, ed. by Philip Clayton and Paul Davies, Oxford University Press.
 2006b “Emergence: Core Ideas and Issues”, *Synthese*, 151, 3, pp. 347–354.

Knight, C.

- 1998 “Ritual/Speech Coevolution: A Solution to the Problem of Deception”, in *Approaches to the Evolution of Language: Social and Cognitive Biases*, ed. by J. R. Hurford, M. Studdert-Kennedy, and C. Knight, Cambridge University Press, pp. 68–91.
 2010 “The Origins of Symbolic Culture”, in *Homo Novus—A Human Without Illusions*, ed. by Ulrich J. Frey, Charlotte Störmer, and Kai P. Willfuhr, Springer-Verlag, pp. 193–211.

Kohr, Leopold

- 1957 *The Breakdown of Nations*, Routledge & K. Paul.

Kripke, Saul

- 1980 *Naming and Necessity*, Harvard University Press.

Langer, Suzanne K.

- 1953 *Feeling and Form: a theory of art developed from Philosophy in a New Key*, Charles Scribner’s Sons.

Laplace, Pierre Simon

- 1951 *A Philosophical Essay on Probabilities*, ed. by F. W. Truscott and F. L. Emory, Dover Publications.

Latour, Bruno

- 1987 *Science in Action*, Harvard University Press.
 1991 *We Have Never Been Modern*, Harvard University Press.

Laver, James

- 1945 *Taste and Fashion; from the French Revolution until today*, G. G. Harrap & Company Ltd.

Leroi-Gourhan, André

- 1943 *L’homme et la matière*, Albin Michel.
 1945 *Milieu et techniques*, Albin Michel.
 1993 *Gesture and Speech*, ed. by Anna Bostock Berger, MIT Press.

Levine, Bettijane

- 2006 “The Master of Delight”, *Los Angeles Times* [Mar. 2006].

Levitt, Gerald M.

- 2000 *The Turk, Chess Automaton*, McFarland & Co Inc.

- Lewis, J.
 2009 “As Well as Words: Congo Pygmy Hunting, Mimicry and Play”, in *The Cradle of Language*, ed. by R. Botha and C. Knight, Oxford University Press, pp. 236–256.
- Locke, John
 1976 *Essay on Human Understanding, Vol. II*, Dutton Publishers.
- Lopes, Dominic McIver
 2003 “The Aesthetics of Photographic Transparency”, *Mind*, 112, 447 [July 2003], pp. 433–448.
 2012 “Afterword: Photography and the “Picturesque Agent””, *Critical Inquiry*, 38, 4, pp. 855–869.
- Lovitt, William
 1977 “Introduction”, in *The Question Concerning Technology and Other Essays*, Harper Torchbooks, pp. xiii–xxxix.
- Machen, Arthur
 2012 “The White People”, in *The House of Souls*, The Floating Press.
- Marcuse, Herbert
 1964 *One-Dimensional Man*, Beacon Press.
 1969 *An Essay on Liberation*, Beacon Press.
 2005 “Some Social Implications of Modern Technology”, in *Essential Frankfurt School Reader*, ed. by Andrew Arato and Eike Gebhardt, The Continuum Publishing Company.
- Marrati, Paola
 2003 *Gilles Deleuze: Cinema and Philosophy*, ed. by Alisa Hartz, Johns Hopkins University Press.
- Marx, Karl
 1976 *Capital*, ed. by Ben Fowkes, Penguin.
- Maynard, Patrick
 2012 “Arts, Agents, Artifacts: Photography’s Automatism”, *Critical Inquiry*, 38, 4, pp. 727–745.
- McBride, D. M. and D. M. Doshier
 2002 “A comparison of conscious and automatic memory processes for picture and word stimuli: a process dissociation analysis”, *Consciousness and Cognition*, 11, pp. 423–460.
- McLaughlin, B. P.
 1997a “Emergence and Supervenience”, *Intellectica*, 2, pp. 25–34.
 1997b “Supervenience, Vagueness, and Determination”, *Philosophical Perspectives*, 11, pp. 209–230.
- Merleau-Ponty, Maurice
 2002 *Phenomenology of Perception*, Routledge.

- Mintzer, Miriam Z. and Joan Gay Snodgrass
 1999 “The Picture Superiority Effect: Support for the Distinctiveness Model”, *The American Journal of Psychology*, 112, 1, pp. 113–146.
- Moore, G. E.
 1922 *Philosophical Studies*, Routledge.
- Mouhot, Henri
 2005 *Travels in the Central Parts of Siam, Cambodia and Laos*, Elibron Classics.
- Mumford, Lewis
 1970 *The Myth of the Machine: The Pentagon of Power*, Harcourt Brace Jovanovich.
- Nagel, Thomas
 1971 “The Absurd”, *The Journal of Philosophy*, 68, 20, pp. 716–727.
- Naughton, John
 2012 “Cyberwarfare takes Heidegger’s ideas to their logical end”, *The Guardian* [Apr. 2012].
- Nelson, D. L., U. S. Reed, and J. R. Walling
 1976 “Pictorial Superiority Effect”, *Journal of Experimental Psychology: Human Learning and Memory*, 2.
- Nietzsche, Friedrich
 2002 *Beyond Good and Evil*, Cambridge University Press.
- O’Connor, Timothy
 1994 “Emergent Properties”, *American Philosophical Quarterly*, 31, pp. 91–104.
- Oullette, Jennifer
 2005 *Black Bodies and Quantum Cats: Tales from the Annals of Physics*, Penguin Classics.
- Paivio, Allan
 1986 *Mental representations: A dual-coding approach*, Oxford University Press.
- Peirce, Charles Sanders
 1992 *The Essential Peirce*, Indiana University Press, vol. 1.
 1999 *The Essential Peirce*, Indiana University Press, vol. 2.
- Phillips, Dawn
 2009 “Photography and Causation: Responding to Scruton’s Scepticism”, *British Journal of Aesthetics*, 49.
- Pinker, Steven
 1992 “Review: Language and Species”, *Language*, 68, 2.

Plantinga, Carl

- 2005 “What Documentary Is, After All”, *The Journal of Aesthetics and Art Criticism*, 63, 2, pp. 105–117.

Plato

- 1997 *Complete Works*, ed. by John M. Cooper, Hackett Publishing Co.

Plummer, Thomas

- 2004 “Flaked Stones and Old Bones: Biological and Cultural Evolution at the Dawn of Technology”, *Yearbook of Physical Anthropology*, 47, pp. 118–164.

Poppick, Susie

- 2013 “Computers tank the stock market”, *CNNMoney.com* [Jan. 2013].

Postman, Neil

- 1993 *Technopoly: The Surrender of Culture to Technology*, Vintage Books.

Power, C.

- 1998 “Old Wives’ Tales: The Gossip Hypothesis and the Reliability of Cheap Signals”, in *Approaches to the Evolution of Language: Social and Cognitive Biases*, ed. by J. R. Hurford, M. Studdert-Kennedy, and C. Knight, Cambridge University Press, pp. 111–129.

Pye, David

- 1968 *The Nature and Art of Workmanship*, Cambridge University Press.
1978 *The Nature and Aesthetics of Design*, Cambium Press.

Racknitz, Joseph Friedrich

- 1789 *Ueber den schachspieler des herrn von Kempelen und dessen nachbildung*, J.G.I. Breitkopf.

Rappaport, R. A.

- 1979 *Ecology, Meaning, and Religion*, North Atlantic Books.
1999 *Ritual and Religion in the Making of Humanity*, Cambridge University Press.

Rorty, Richard

- 1972 “The World Well Lost”, *The Journal of Philosophy*, 69, 19, pp. 649–665.
1976 “Overcoming the Tradition: Heidegger and Dewey”, *The Review of Metaphysics*, 30, 2 [Dec. 1976], pp. 280–305.
1991 *Essays on Heidegger and Others*, Cambridge University Press.
1993 “Wittgenstein, Heidegger, and the Reification of Language”, in *The Cambridge Companion to Heidegger*, ed. by Charles Guignon, Cambridge University Press, pp. 337–357.
1998 “A Master from Germany”, *New York Times* [May 1998].
2008 *Philosophy and the Mirror of Nature*, Princeton University Press.

- Rose, Steve, Richard Lewontin, and Leon Kamin
 1990 *Not in Our Genes: Biology, Ideology and Human Nature*, Penguin.
- Russell, Bertrand
 1927 *The Analysis of Matter*, Kegan Paul.
 1971 *Problems of Philosophy*, Oxford University Press.
- Safranski, Rudiger
 1999 *Martin Heidegger: Between Good and Evil*, Harvard University Press.
- Sale, Kirkpatrick
 1996 *Rebels Against the Future: The Luddites and Their War on the Industrial Revolution*, Basic Books.
- Sartre, Jean-Paul
 1988 *What is Literature?*, Harvard University Press.
- Schumacher, E. F.
 1973 *Small Is Beautiful: A Study of Economics As If People Mattered*, Blond & Briggs.
- Scruton, Roger
 1981 "Photography and Representation", *Critical Inquiry*, 7, 3, pp. 577–603.
- Shagrir, O.
 2002 "Global Supervenience, Coincident Entities and Anti-individualism", *Philosophical Studies*, 109, pp. 171–196.
- Sider, T. R.
 1999 "Global Supervenience and Identity Across Times and Worlds", *Philosophy and Phenomenological Research*, 50, pp. 913–937.
- Simondon, Gilbert
 1958 *Du mode d'existence des objets techniques*, Aubier.
 1964 *L'individu et sa genèse physico-biologique*, Presses Universitaire de France.
- Sinnerbrink, Robert
 2011 *New Philosophies of Film: Thinking Images*, Continuum.
- Slobodchikoff, Constantine
 1991 "Semantic information Distinguishing Individual Predators in the Alarm Calls of Gunnison's Prairie Dogs", *Animal Behaviour*, 42, pp. 713–719.
- Snyder, Joel and Neil Walsh Allen
 1975 "Photography, Vision, and Representation", *Critical Inquiry*, 2, 1, pp. 143–169.
- Sontag, Susan
 2008 *On Photography*, Penguin Classics.

- Stalnaker, R.
 1996 "Varieties of Supervenience", *Philosophical Perspectives*, 10, pp. 221–241.
- Standage, Tom
 2002 *The Turk: The Life and Times of the Famous 19th Century Chess-Playing Machine*, Walker.
- Stephenson, Neal
 2000 *Cryptonomicon*, Random House.
- Stiegler, Bernard
 1998 *Technics and Time, 1: The Fault of Epithemeus*, Stanford University Press.
- Susman, R. L.
 1987 "Who Made the Oldowan Stone Tools?", *Journal of Anthropological Research*, 47, 2, pp. 129–151.
- Tijmes, Pieter
 2001 "Albert Borgmann: Technology and the Character of Everyday Life", in *American Philosophy of Technology: The Empirical Turn*, ed. by Hans Achterhuis, Indiana University Press.
- Tomasello, Michael
 1999 *The Cultural Origins of Human Cognition*, Harvard University Press.
- Verbeek, Peter-Paul
 2001 "Don Ihde: The Technological Lifeworld", in *American Philosophy of Technology: The Empirical Turn*, ed. by Hans Achterhuis, Indiana University Press.
- Wade, Nicholas J. and Stanley Finger
 2001 "The eye as an optical instrument: from camera obscura to Helmholtz's perspective", *Perception*, 30, 10, pp. 1157–1177.
- Walker, Mick
 2006 *Motorcycle: Evolution, Design, Passion*, Johns Hopkins University Press.
- Walton, Kendall L.
 1984 "Transparent Pictures: On the Nature of Photographic Realism", *Critical Inquiry*, 11, 2, pp. 246–277.
 1997 "On Pictures and Photographs: Questions Answered", in *Film Theory and Philosophy*, ed. by R. Allen and M. Smith, Oxford University Press, pp. 60–75.
- Warburton, Nigel
 1988 "Seeing through 'Seeing through Photographs'", *Ratio*, 1, pp. 64–74.

Warhol, Andy

- 1977 *The Philosophy of Andy Warhol: From A to B and Back Again*, Houghton Mifflin Harcourt Trade and Reference Publishers.

Watts, I.

- 2009 “Red Ochre, Body Painting, and Language: Interpreting the Blombos Ochre”, in *The Cradle of Language*, Oxford University Press, pp. 62–92.

Weber, Max

- 1966 *The Sociology of Religion*, Methuen.
1991 “Science as a Vocation”, in *From Max Weber: Essays in Sociology*, ed. by H. H. Gerth and C. Wright Mills, Routledge.

Woodrige, Dean

- 1963 *The Machinery of the Brain*, McGraw Hill.

Young, Damon

- 2009 “Bowling to your Enemies: Courtesy, Bud?, and Japan”, *Philosophy East and West*, 59, 2.

Zahavi, A.

- 1993 “The Fallacy of Conventional Signalling”, *Philosophical Transactions of the Royal Society of London*, 340, pp. 227–230.