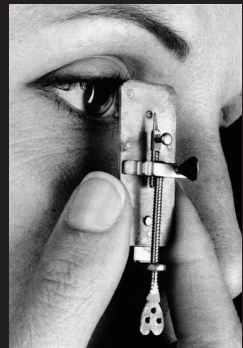


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The Rhetoric of Instrumentation: Objectivity, Instrumental Rationality and Affect

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Abstract

This paper assembles thoughts on a ‘deep historical’ approach to scientific instrumentation and what it might reveal of the occult dimensions of these technologies. It adopts a general focus on the themes of objectivity and ‘instrumental rationality’, particularly as discussed by Massumi (2002), whose work offers a starting point from which to consider the relationship between objectivity, action and bodily affect. *Contra* Heidegger’s *The Question Concerning Technology* (1982), where technology is seen to exhaust the potential meaning of natural resources, this paper suggests that the dimensions of the body accessed by instrumentation are not fully accounted for; there is an occult, sublime dimension that instrumentation, and the affect it provokes, might be said to reveal. In J.G. Ballard’s (1966) short stories, this unknown potential signifies a terrible and irresistible force. However, in cases of placebo surgery, or in the use of devices such as thermometers, tractors, hypnotherapy and homeopathy (Drayson, 2011a), instrumental technologies, and the way in which they are perceived, reveal untapped and (ir)rational affects as a therapeutic dimension. Far from simply offering a form of objective knowledge, instrumental technology contains a dual potential. Instruments, in their apparent machine knowledge, are accompanied by a rhetorical potential to see things that our human, and epistemologically unsuitable, perception cannot detect; they promise to connect to a reality that is obtuse and hidden. At the same time, building upon these promises of objectivity, instruments incorporate an affective dimension, concealing a potential for action seemingly unrelated to their depictions of ‘reality’. These ideas can be used to help construct an account of something that we might call the ‘placebo affect’.

Introduction

‘Deep history’ is the study of human history that does not hold itself reliant on written documents, monuments and inscriptions (Smail, 2008, p. 52). As a consequence of mounting evidence from geological and archaeological finds, it was realised in the mid-nineteenth century that ‘deep’, pre-historic time was a much longer period than originally suggested by theological (sacred) dating (2008, p. 25). To gain access to these deep historical periods, investigators have found the need to move beyond the traditional analysis of written texts and records – the materials of intentional and

self-aware history – and extend their method of investigation with the use of archaeological traces and scientific evidence, be that ruins, artifacts or DNA (2008, pp. 50-53). The biological and archaeological material record from which deep histories are constructed takes into account aspects of pre-human and Neolithic life that offer insights into cultural, behavioural and perceptual aspects of the lives of our ancestors.

While these methods might seem biased toward a materialist account of human life, they offer an opportunity for the reconstruction of affect from the material record; a project that is

reflected in similar concerns with the materiality of media form and perception in the field of media archaeology. Zielinski (2006) has identified the need for an appreciation of a “deep time of the media”; contemporary discussion of media technologies tends to focus unduly on the historical present and on dialogues regarding progress. While deep history as an approach is concerned with the pre-historic, its techniques – archaeological, object-based, and concerned with human embodiment, behaviour and perception – can be applied to the nearer past, drawing attention to themes of a longer duration in media, as well as themes such as planned obsolescence (Parikka, 2012).

This paper reflects on an idea raised by the possibility of a deep historical approach to scientific instrumentation,¹ by bringing the notion of instrumental rationality to the discussion. ‘Instrumental rationality’ is a mode of thought regarding causality, possible action and objects, which comes into play in everyday understandings of scientific instrumentation. The following discussion explores the themes of instrumental rationality, perception and objectivity with reference to the work of Massumi (2002). Massumi’s description of objectivity is rooted in his own exploration of human perceptual experience and engagement with the world. By taking an approach inspired by deep historical thinking, and applying it to scientific instrumentation, we might profit from approaching the discussion of objectivity in a slightly different way, one that allows us to consider the aspects of perception that are implicated. It is hoped that by bringing these together and – for the purposes of this paper – thickening it with some descriptions of affect, technology and its occult dimensions from the writing of J.G. Ballard, a discussion of instrumental technologies and thought (understood as media) might, speculatively, offer an extension of the potential of media archaeology as an approach in this area of enquiry.

Exploring instrumentation and rationality through a deep history of media.

The suggestion is that a deep historical approach can be extended to thinking and talking about scientific – in particular, medical – instruments as forms of media, and thus open up dialogues regarding affect, cognition, desire (Punt, 2000) and perception. The idea of instruments as a form of media is here taken to mean that the phenomena detected and reified by instrumentation are themselves representations in the way that they construct the body, reality or knowledge. Philosophical instruments become demonstrations of the order of the physical world and human relationships to it. While an MRI or CT scanner may not transmit information from one person to another as we might traditionally typify a communications medium, both in its design and the way in which it is used and talked about, the scanner contains and communicates a number of messages that are part of its function and design (however these are intended), and so fulfills a rhetorical function (Joyce, 2008; Saunders, 2008; Latour and Woolgar, 1986).

Taking an archaeological approach also benefits thinking about a variety of other technologies, expanding the potential for writing history beyond tales of provenance and progress to consider underlying forces and flows that give rise to particular kinds of experience and thought, and their manifestations in material and technological culture. Zielinski (2006) gives an indication of the resonance of this alternative approach when he adopts the word ‘curiosities’ to refer to the particular facets of media that guide his scholarship:

By curiosities, I mean finds from the rich history of seeing, hearing, and combining using technical means: things in which something appears or glitters – their bioluminescence – and also points beyond the meaning or function of their immediate contexts of origin.

It is in this sense that I refer to attractions, sensations, events, or phenomena that create a stir and draw our attention: these demand to be portrayed in such a way that their potential to stimulate can develop and flourish. (Zielinski, 2006, p. 34).

Zielinski's approach encourages us to think of our objects of study from the viewpoint of the perceiver, but what about the case of the scientific instrument implicated in the removal of the personality of the perceiver and its replacement with a 'correct' and structured vision? Yet the instrument seems to add another perspective to the multiplicity of positions from which we might regard an object. Mol's (1996; 2002) study of the way in which a collection of medical gazes are brought together in the appreciation and management of disease objects examines the manifold accounts of disease (some instrumental) and the pragmatic relevance of that knowledge to how we might live with, treat or ignore them. This offers a useful explication of the understanding of objective devices and their interactions with other forms of knowledge creation and human action.

However, it seems there is more to instrumental technologies: as well as their utility, they include a certain rhetoric, and have form of rationality attached to them that allows us to make sense of what they offer of the world. Further than this, they include an occult dimension of instrumental function which manifests in the way in which expectations and ideas surrounding instrumental technologies influence the physiological responses of those subjected to their gaze – as discussed in my previous writing on the lie detector (Drayson, 2011b). The rhetoric of objectivity conceals part of what instruments mean to us, perceptually and affectively. Their promise of action and knowledge contains associations that may provoke affective responses in the bodies to which they are applied.

For Daston and Galison (2007), the concept of objectivity can be understood through its relation to scientific epistemology and culture. Objectivity comes in different forms, each of which focuses the practitioner's attention on methodological issues and their epistemological reasoning. In particular, Daston and Galison's (2007) explorations of objectivity draw attention to how these approaches to acting and thinking about the world are associated with a moral stance. Their study offers a number of historical examples of types of objectivity, but they stress that these do not eclipse one another, but coexist within scientific practices up to the present day. Both truth-to-nature and trained judgment complement the machine objectivity of the instrument and the scientist working with systematic data collection (p. 41). While it is useful to examine the modification and development of different forms of scientific reasoning, we might extend our understanding of these categories into the experience of objectivity in perception, in order to explore affect in instrumentation.

Perception, objectivity and instrumental rationality

In *Parables for the Virtual* (2002), Brian Massumi offers a useful exploration of perception and its relationship with objectivity and instrumental rationality: when we regard things that via our attention become objects, sensation and perception are at one end of a spectrum, at the other end of which lies thought. The extreme edge of this is what he refers to as "only-thought" (2002, p. 94): the thought about a thing that takes place in the absence of any actual perception of that thing. Whatever type of creature the perceiver is, its perceptions and sensations of a thing, as well as its thoughts regarding that thing, whether relating to the satisfaction of appetite, instinct or poetic goals, are extended into to the potential for action:-

A creature's perception is exactly proportioned to its action upon the thing. The properties of the perceived thing are the properties of the action, more than of the thing itself. This does not mean ... that the properties are subjective or in the perceiver. On the contrary, they are tokens of the perceiver's and perceived's concrete inclusion in each other's world. The perception lies between the perceiver and the perceived. The sight of the flower is an actual bodily conjunction, a joint material connection of the perceiver and the perceived... (Massumi, 2002, p. 90)

Perception itself is selective; it discriminates between those qualities that are relevant and accessible to the organism doing the sensing. In his example of a flower, Massumi (2002, p. 93) points out that a bee will have a particular perception, or perceptions, that are based on its possibility for action involving the flower. Each perception can be stretched to include possible actions, and the substitution of one action for another, depending on context and intent. All of these perceptions select from the reality of the flower as a thing in itself, extending it through the possible actions of other organisms and the relationships between them. However, as a totality, these actions do not account for or exhaust the latent potential of the flower: "...the flower the bee sees is not the 'same' flower a human sees. It is a particular, need-oriented selection from the experience of the singular multiplicity that is its inexhaustible complexity as a thing 'in itself' (in its potential connections)" (2002, p. 93). A human being might see...

...more than that bee, but by no means the full range of its inexhaustible complexity. A human will see enough to extract not just pollen for immediate collection but also, for example, a pharmaceutical for profitable distribution. Human perception is unique in the degree to which it can extend itself into the only-thought and thus, into the future, in more and more varied ways. It can do this because it is capable of connection with a thing

as if it somehow existed outside of any particular perception of it. (Massumi, 2002, p. 93)

This is what Massumi extends to the central action of objectivity, a 'mode of abstraction' which actively selects from the possible and simplifies it in order to arrive at a general 'flower-thing' as an "object of a set of regularized floral connections systematized in such a way as to ensure the maximum repeatability of the largest number of actions with the maximum uniformity of result" (2002, p. 93).

Objectivity makes more possibilities more anticipatable, and thus more accessible as [the] next connection. Objectivity shadows the perception with an increased charge of possibility, which cycles back into perception to augment the potentiality of the thing it began by purifying [abstracting] and thinking out... Sensation is the point of co-conversion through which the variations of perception and thought play out. (Massumi, 2002, pp. 93- 94)

The reason that this understanding of objectification is useful to us is that it allows us to speculate on the extended and occult aspects of the phenomenal world, and thus plan our interactions with it. Massumi states that there is a particular type of rationality at work when we engage with this way of looking at the world – instrumental rationality, which is invoked by our objectification and analysis of our potential interaction with things. So we can talk about the way in which devices themselves are understood to contain knowledge, and like the rest of the world, to hold a potentiality that exceeds our models of use, which may include a "methodological invention of new connections as previously inaccessible aspects of forces emerge" (2002, p. 95). Objectivity, the creation of a virtual extension of the material world through thinking-out objects, is the rational consideration of what we might do with them: the prediction of possible interactions between objects is the practice of 'instrumental rational-

ity' (2002, p. 94). However, instrumental rationality only opens up the known dimensions of objects in the space of imaginable possibility, perhaps leaving other occult dimensions unexplored.

A technological sublime

J.G. Ballard's (1966) short story, 'The Reptile Enclosure', published in his collection *Terminal Beach*, tells the tale of an academic, Roger Pelham, and his wife Mildred, who find themselves on a fantastically overcrowded beach one afternoon. Roger finds himself unable to explain his motivation for travelling there, or for spending several hours without food in the sweltering heat, waiting for something unknown, in an environment that would usually irritate and offend him. However, he finds himself musing over the theories of a fellow academic, who has been exploring the concept of "IRMs" ("innate releasing mechanisms") and "inherited reflexes", and their relation to the recent launch of new satellites from Cape Kennedy that will form a planet-wide communications network (1966, p. 111). Ballard's story ends with the disquieting scene where the many thousands of people who have gathered on the seafront find themselves irresistibly drawn into the sea, hypnotised by the inexplicable pull of the light from a newly launched satellite, Echo XXII, as it rises over the water.

Ballard's story, via the theories of Roger Pelham's (almost) absent colleague, attributes the source of these irresistible reflexes to an earlier time, in which the "pattern setting off IRMs [were] laid down millions of years ago when other space vehicles were circling the earth" (author's emphasis) (1966, p. 117). Somehow, it appears that this pattern has been inadvertently recreated by a newly launched network of satellites, causing an inexplicable mass response, which, according to the archeological record, previously resulted in "bone-beds ... found under lake shores" as thousands of

ancestral humans found themselves inexorably drawn into the lake waters, where they drowned (1966, p.188). Ballard's attribution of the source of this 'reflex' to a previous (perhaps alien) space-going civilization might be interpreted as somewhat of a disappointment, essentially attributing the ability to modify human instincts to a higher power (a trope familiar in contemporary science fiction films). However, he does not indicate that this reflex, last actuated in the bodies of Cro-Magnon man, was intentionally designed. Ballard uses the word 'panic' to describe the experience of the ancestral humans, and so we may interpret the most recent mass drowning as an accident, caused by the physical encoding of this terror, passed down to contemporary human bodies as an ancestral memory. In fact, rather than require an intentional high technology of genetic manipulation, Ballard's story seems prescient. It suggests instead that less obvious mechanistic systems might give rise to the epigenetic programming of populations through the long histories of interactions between biological (DNA, RNA), cultural, behavioural and symbolic dimensions, which are now increasingly understood to modify the physical body in a hereditary fashion. Until recently, this idea has been regarded by the biological sciences as unorthodox and problematic, in distinction to more accepted and gene-focused accounts of human evolution (Jablonka and Lamb, 2005).

Ballard's story is useful as it presents a fantasy of a latent affective dimension, of 'innate reflexes' that are irresistible, hereditary, and somehow activated by the symbolic structures of a new implementation of technology, in this case the satellites. While this theme of unknown and sublime terror echoes through the works of a number of science fiction and horror writers of the twentieth century (H.P. Lovecraft's work, for example, exploits this formula), many of the stories in Ballard's oeuvre echo a particular theme of architectural and archaeological technological form which resonates with an occult

dimension of the human body. In one tale, an Aztec temple complex causes hallucinations of disease and writhing snakes. In another, the concrete ruins of an abandoned atoll, once a test site for atomic weapons, exerts an inexplicable compulsion that draws lone pilgrims to die alone there, trapped in reveries that mix their personal loss, memories, and fantasies of a third world war that never took place with the strangely ritualistic structures of the laboratory landscape, littered with abandoned test structures, concrete bunkers, equipment, lakes of mutant fish and the melted plastic figures of test dummies. A visitor to the island, collecting samples of its mutated botany, encounters one of Ballard's castaways, and muses on the island's potential:

"In some way its landscape seems to be involved with certain unconscious notions of time, and in particular with those that may be a repressed premonition of our own deaths. The attractions and dangers of such an architecture, as the past has shown, need no stressing..." (Ballard, 1996, p. 147)

Ballard's architectures (whether ancient or contemporary), and their ability to compel their visitors into insanity, are never explained through reference to rational mechanisms, whether medical (starvation, poisoning, disease or exposure to radiation) or psychological (madness or regret), but to some opaque and inaccessible irrationality. By describing the potential for these things to take place, his stories warn us of a latent aspect in what we create that cannot be contained or managed, and which may lurk in the ancestral body.

Placebo 'affect'

According to Massumi (2002, p. 27), 'affect' (or intensity), "most often used loosely as a synonym for emotion" is in fact something that follows "different logics and pertains to different orders":

An emotion is a subjective content, the socio-linguistic fixing of the quality of an experience, which is from that point onward defined as personal. Emotion is qualified intensity, the conventional, consensual point of insertion of intensity into semantically and semiotically formed progressions, into [a] narrativizable action-reaction circuit, into function and meaning. It is intensity owned and recognized ... affect is unqualified. As such, it is not ownable or recognizable and thus resistant to critique. (Massumi, 2002, p. 28)

As Massumi (2002, p. 28) describes it, affect is "irreducibly bodily and autonomic". It can be thought of as a bodily sublime that incorporates elements of sensation that have not yet been codified as emotion, and would be modified if they were.

The affective potential of instrumentation as part of a wider context of medical intervention is exemplified by studies of placebo responses in controlled trials of surgical procedures. Mosely *et al.*'s (2002) well-publicised trial of arthroscopic knee surgery found that there was no substantial difference between the recovery time and improvement of patients who had received a 'sham' surgical procedure, carefully conducted to recreate as closely as possible the actual experience of surgery (including anaesthesia and surgical incisions). The authors conclude:

Researchers should reconsider the best ways of testing the efficacy of surgical procedures performed purely for the improvement of symptoms. In the debate about placebo-controlled trials of surgery, critical ethical considerations surround the choice of the placebo. Finally, health care researchers should not underestimate the placebo effect, regardless of its mechanism. (Mosely *et al.*, 2002, p. 87)

The experience of surgery and its effect on patients supports an understanding of the placebo effect alongside many other examples of placebo studies focusing on a wide range

of treatments – for example, analgesia, antidepressants (Kirsch, 2013) and homeopathy (Hyland and Whalley, 2008) – that stress the importance of context and meaning to the affective potential of these interventions (Moerman, 2002). In Hyland and Whalley's (2008, p. 407) work on the placebo effect in users of flower therapies, a concordance was found between the spiritual beliefs of patients and an enhanced effect of the placebo ritual they undertook if the study had specified that the flower therapies themselves were "contextualized as a spiritual therapy" by using spiritual affirmations as part of the treatment. However, in the group with spiritual beliefs that did not associate flower therapies with spiritualism, this further effect was not found. What this would suggest is a certain instrumental thinking may have informed the placebo response of this group, creating feedback with affective responses to an activity and its meaning.

Conclusion: objectivity, instrumental realism and the sublime

If we want to embark on a deep historical investigation of scientific instrumentation, we first have to define the philosophical ground on which we are dealing with instrumentation. We need to take into account that these devices are not simply material and mechanical, and consider their effects upon, and interactions with, human perception and cognition, and how they are implicated in the production of other objects, including human bodies – as exemplified in accounts of the placebo effect, where meaning, context and technologies resonate through affective dimensions of the body. Massumi's (2002) discussion of objectivity in perception allows us to understand the resonance of objectivity and instrumental thinking in perception. If my reading of Massumi is correct, then we can see objectivity as integral to the perceptual process; the more objective, the better the quality of correspondence between the object (Massumi's flower) as a type, rather

than an individual – that is, its correspondence with flower-hood – for whichever pragmatic purposes it is designed. However, there are affective dimensions latent within perception that exist both within the perceiver and the object, and in the case of instrumentation, are part of a particular, rather powerful promise of knowledge that wields its own force. If we take the image of technology painted by Ballard's fiction, instrumental technologies (in some cases) have affective dimensions that are unpredictable and inaccessible, even to the perceiver. What this suggests is that the instrumentally rational mode of thought-perception is able to harbour strange and fearful spaces, untapped potentials, ancestral or alien impulses, irresistible memories, instincts, affects, lurking below the surfaces of rationalised knowledge and expectation.

Notes

¹ The question of attempting a deep historical approach to instrumentation in this way was partly prompted by a dialogue in recent editorials on the subjects of deep history, the sublime and science, published in *Leonardo Reviews Quarterly* (L|R|Q) issue 2.01 (Punt, 2012; Woodward, 2012).

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Dr Hannah Drayson is an artist and lecturer in digital art and technology. Her work explores the theoretical territory around the use of instrumental sensors for human body measurement.



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