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ESSAY REVIEW

Excavating the Future: Taking an 'Archaeological' Approach to Technology

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KELLY C. *Cracked Media: The Sound of Malfunction* 392p. Cambridge MA: The MIT Press. 2009. ISBN: 978-0-262-01314-7

VIRILIO P. *The Aesthetics of Disappearance* 128p. Intro. Jonathan Crary. Cambridge MA: The MIT Press. 2009. ISBN: 1-58435-074-1

JAMES C. *Young People, Ethics, and the New Digital Media: A Synthesis from the Good Play Project*. The John D. and Catherine T. MacArthur Foundation Reports on Digital Media and Learning. 77p. Cambridge MA: The MIT Press. 2009. ISBN: 0-262-51363-3

How would the present appear if the Victorians had mass produced computers?

It is known that analogue computers, like the Antikythera mechanism, thought to have been used to predict solar eclipses, had been invented nearly two millennia ago in the Hellenistic world (Freeth, T *et al*, 2008). Yet, despite their mechanical precision and sophistication these machines were not mass produced. An early Victorian mathematician and inventor, Charles Babbage, had imagined a mechanical calculator in 1822. If his prototype had been commercially manufactured, Babbage's Difference Engine may have changed the aesthetics of technology: analogue computers powered by clockwork motors instead of electronic circuitry; handcrafted in brass and lacquered wood instead of silicon and plastic. It would be a steam-powered world, finished in mahogany and leather. This elegant and romantic alternative future is embodied through the neo-Victoriana alternative culture called 'steampunk'. It seems fitting that the world's oldest surviving purpose-built museum, Oxford University's Old Ashmolean Building, home to the

Museum of the History of Science, should have hosted the first international exhibition of Victorian inspired steampunk art between October 2009 and February 2010. This extraordinarily successful exhibition showcased the work of eighteen international artists and attracted over 70,000 visitors to exhibits as esoteric as clockwork hearts, steam-powered computer mice, and mechanical brass spiders. H.G. Wells' fantastical description in *The war of the worlds* (1898) of the articulated 'musculature' of Martian machinery consisting of systems of sliding parts moving over small but beautifully curved friction bearings enabling spider-like movement was inspired, no doubt, by late Victorian precision craftsmanship and bares a passing resemblance to current developments of electroactive polymers for use in sensors and robotic actuators. Broadly speaking, the steampunk movement could be read as a popular reaction to living through the fallout of relentless information acceleration as envisaged by Paul Virilio's 'information bomb' (Virilio, 2000, 2002). To paraphrase Paul Virilio and Slavoj Žižek, we are already experiencing a 'disappearance' of technology as multi-platform tools become smaller, faster, and disappear from physical sight, only to become more integrated into our daily lives (Žižek 2003, 18). Steampunk creatively 'excavates' those lost moments in human history when technology was commonly intelligible. Steampunk substitutes metal gears for silicon and pneumatic tubes for wireless thereby making prominent what is increasingly hidden. The steampunk aesthetic is visible and bespoke not miniature and mass-produced.

Steampunk's creative excavation of an imagined past in order to re-imagine an alternative future overtly manifests, at a popular level, implicit scholarly approaches to 'media archaeology'. This emerging critical field, pioneered by Friedrich Kittler, Erkki Huhtamo, Siegfried Zielinski**,** and Michael Shanks, excavates forgotten, neglected and suppressed media-cultural phenomena, helping us to probe deeper into a culture's canonised narratives so as to unearth: 'discontinuity, rupture, threshold, limit, series, and transformation' present in all historical analysis (Foucault, 2007/1969, 23). Media archaeology is deeply rooted in the work of Michel Foucault. The concept of 'archaeology' as articulated by the early Foucault in *The order of things* (2008/1966) and

The archaeology of knowledge (2007/1969), was a key historiographical method for him as it proposed that systems of thought and knowledge, Foucault calls '*epistemes*' or 'discursive formations', operate beneath the consciousness of the individual subject and define a system of conceptual possibilities that determine the boundaries of thought at a given period. A leitmotif threading the three texts under review is the socio-cultural impact of technological mediation on the processing and dissemination of information. Technologies are tools of transformation both through practical usage and ideological construction. For Caleb Kelly, turntablism mediates the expanded soundscapes so emblematic of the twentieth century's 'sonic turn', for Paul Virilio, hypermodernity is played out via the cinema screen through immersive moments of accelerated vision, while, for Carrie James, the computer screen is the locus for questioning constructions of the networked self.

Media archaeologists mostly choose to excavate fringe or forgotten prototypes so as to reveal problematic aspects to the 'impact narrative' of technological positivism (Kelly, 26). In *Cracked media: The sound of malfunction* Caleb Kelly, a lecturer at the Sydney College of the Arts, University of Sydney, reminds his reader that an established history of any technology is merely one thread comprising a web of alternative histories. The crack, in *Cracked media*, is a sonic point of rupture or locus of chance occurrence ripe for potential creative encounters. The book's investigation of 'detritus-driven sound' prefigures discussions that underpin glitch aesthetics by focusing on work that interrogates the materiality of two iconic media: the vinyl record and the compact disc (Kelly, 8). Kelly 'mines' the practice and ideology of analogue turntablism as a foreshadowing of digital experimentation (Kelly, 166). From the mid-twentieth into the twenty-first century, artists and musicians have manipulated, cracked, and broken audio media technologies to produce novel sounds and performances. Artists and musicians, including John Cage, Nam June Paik, Yasunao Tone, and Oval, pulled apart both playback devices (turntables and compact disc players) and the recorded media (records and compact discs) to create an extended sound palette. Kelly's sweeping survey catalogues a broad range of experimentation with these playback technologies to create

detailed timelines of misuse and critical engagement so as construct a 'trajectory of extended sound' (Kelly, 164) rooted in the prepared piano of Erik Satie's *Piège de Méduse* (1913 or 1914) and Luigi Russolo's *L'arte dei Rumori* (Art of Noises) Futurist manifesto of 1913. Kelly methodically tracks sound projects that intentionally expanded the sonic potential of vinyl and compact disc over the entire twentieth century and in so doing formulates a provocative critique of musical performance and reproduction that is equally assured referencing the theories of Friedrich Kittler and Theodor Adorno as the practice of DJ Qbert and Christian Marclay.

With the commercial release of the compact disc in the early 1980s, it quickly became apparent that many of the strategies for tampering with the phonograph and vinyl records lent themselves to rupturing the 'frictionless' laser playback system driving compact disc technology as illustrated by Tone's 'wounded CDs' and Oval's glitches. Japanese artist, Yasunao Tone, for his album, *Solo for Wounded CD* (1985), damaged compact discs and used the information extracted by a CD player from those discs to create new audio pieces. Oval, formed in Germany by Markus Popp, Sebastian Oschatz, and Frank Metzger, are regarded as pioneers of glitch, a genre of music that privileges the sound of damaged audio produced by the failure of digital equipment. Oval deliberately mutilated compact discs to generate a fractured sonic palette so as to create an expanded rhythmic electronic style. Kelly devotes time to Oval charting their first experiments in the early 1990s through to their critically acclaimed *Wohnton* (1993), *Systemisch* (1994) and *94diskont* (1995) albums. Oval have explored the intersection of cracked media and pop music which has curiously fed back into the commercial mainstream as in the case of Björk who sampled the track 'Aero Deck' from *Systemisch* on her album *Vespertine* (2001), an observation not mentioned. It would have been interesting if Kelly had devoted more time to ways cracked media practitioners creatively engaged with popular culture. Absent are two boundary-crossing acts both considered by David Toop (2004) and Paul Hegarty (2007), namely, German noise pioneers *Einstürzende Neubauten*, founded by Blixa Bargeld more popularly known through collaborations with Nick Cave

and the Bad Seeds, and Sheffield's *Cabaret Voltaire*, who exploited cut-up techniques inspired by William S. Burroughs.

Of critical importance is the manner Kelly's thesis in *Cracked Media* engages with and expands Douglas Kahn's seminal study *Noise, water, meat: A history of sound in the arts* first published in 1999. Kelly adopts Kahn's approach of 'listening back through the history of the use of cracked media in sound practices . . .this history starts where Kahn's history in *Noise, water, meat* ends, in the 1960s' (Kelly, 23). In a complimentary manner Kelly and Kahn explore the fluid boundaries between noise and music so characteristic of the 'sonic turn' emerging throughout the twentieth century. Both authors cogently argue that the twentieth century was saturated in sound thereby redressing a critical imbalance of perceived 'mute visibility' in previous discussions on the arts of the twentieth century (Kahn, 1999, 2). In Kelly's opinion, sound recording during the early twentieth century was dominated by a concern for fidelity in the reproduction of performance. To Kelly and Kahn the influence of John Cage is paramount to the century's 'sonic turn'. In considering Cage's seminal essay 'The future of music: Credo' (1937/1973) and his subsequent influence on the Fluxus art movement, Kelly argues that Cage significantly expanded the twentieth century's soundscape in two principal ways: firstly, by considering all sounds and silences as potentially musical and secondly, by using playback technologies as musical instruments in themselves. For Kelly, the twentieth century's 'sonic turn', extending into the early twenty-first century, is marked by the 'shadow effect' of technology, whereby 'sounds that are usually hidden underneath the content of any recording are brought to the fore' (Kelly, 42). Kelly reads analogue turntablism as a 'prehistory' to the digital. *Cracked media* concludes with a chapter invoking Michel de Certeau's discussion of 'tactics' in grounding medium-specific practices to the experience of everyday life in a note anticipating contemporary ubiquitous 'meta-media' environments that are still emerging yet lie within Kelly's trajectory of expanding sounds.

Paul Virilio, still one of the most significant French cultural theorists writing today, is an essayist with a special interest in urbanism and the strategic implications of new technologies. His critical approach to speed, military technology, and modernity has been highly influential not only amongst cultural theorists, but also within the work of many other fields including: media theory, international relations, art history, cultural politics, architecture, and peace studies. This edition of Virilio 's seminal treatise *The aesthetics of disappearance*, originally published in 1980, features a new introduction by Jonathan Crary, one of the leading theorists of modern visual culture, who places the work in context and shows its continuing relevance. Virilio's work is influenced by phenomenology, in particular the work of his mentor Maurice Merleau-Ponty, and the technoscientific writings of Einstein. *The aesthetics of disappearance* contradicts the universalising tendencies of Kantean approaches to time as the unifier of thought and perception. Instead the work engages with a Nietzschean discontinuity and rupturing of time similar to his poststructuralist contemporaries Michel Foucault, Gilles Deleuze, and Félix Guattari. However, unlike them, Virilio is a practicing Christian and does not share their anti-humanist positions. However, he has thought in some depth about questions of the post-human, in particular his concept of 'the transplant revolution', in which the human body manipulated through technoscience is becoming endo-colonised (Armitage, 2001; Virilio, 2002).

In *The aesthetics of disappearance*, Virilio draws together thematic linkages through semiotic chains of reference despite his apparently disjointed narrative style. Virilio is precisely attuned to the West's culturally correlated obsession with moving at high speeds and viewing moving images. Speed (velocity) is understood literally as space (distance) mapped against time (duration), reaching its absolute limit in light, which collapses both space and time. Light, or absolute speed, dissolves the implicit dualism of embodied motion and of disembodied stimulus, anticipating a neuro-psychological event, like an epileptic *petit mal*, manifested by momentary glitches in perception that Virilio terms as a 'picnoleptic' seizure. Virilio jump cuts from such disparate references as Fred Astaire, Franz Liszt, and Adolf Loos to Dostoyevsky, René Magritte, and Aldous Huxley;

the narrative accelerates from movie theatre to freeway, and from Craig Breedlove's attainment of terrifying speed in a rocket-power car to the immobility of the reclusive American media mogul Howard Hughes isolated in his dark room atop the *Desert Inn*, Las Vegas, living by proxy by means of the telephone and movie screen like a 'technological monk' seeking to transcend time through technological mastery (Virilio, 37). Hughes through his reclusive invisibility embodies this 'aesthetics of disappearance' meaning the disappearance of embodied perception through the mechanical 'prosthesis' of technology.

Virilio is particularly interested in excavating the semiotics of cinema as explored in his celebrated follow-up study *War and cinema* (1989/1984). Yet, *The aesthetics of disappearance* is concerned with the affects of sight saturation envisaged by Virilio as an assault on the senses. Images are 'loaded weapons' (Virilio, 61). The cinema projector functions as a 'vector of acceleration' (Virilio, 61). The speed at which the images are projected disrupts perception. Awareness is only perceived after the event has occurred like the affect of an explosion. Wearing dark glasses is not simply a fashion statement, to Virilio, but protects the wearer against the constant bombardment of images. Virilio draws a correlation between cinematic illusion and the mirage of information replicated on a computer screen. This simulation of information without the embodiment of sensation only manifests the paradox of being everywhere while being nowhere: 'Speed treats vision like its basic element; with acceleration, to travel is like filming, not so much producing images as new mnemonic traces' (Virilio, 70) Perhaps what is truly at stake in *The aesthetics of disappearance* is the crux between transcendence and implosion: '. . . death itself can no longer be felt as mortal; it becomes as in William Burroughs, a simple technical accident, the final separation of the sound from the picture track' (Virilio, 70)

Virilio's *The aesthetics of disappearance* anticipates globalisation through the Internet. The pictoleptic experience is communal. *Young people, ethics, and the new digital media: A synthesis from the Good Play Project*, edited by Carrie James, relates to the ethical fault-lines emerging from the globalisation of the internet. James is research director and principal investigator at Project Zero, Harvard Graduate School of

Education. Since arriving at Project Zero in 2003, James has worked with Howard Gardner, pioneer of multiple intelligences theory, and colleagues on the Good Work Project, an initiative focused on excellence and ethics at work, in school, and, more recently, at play. *Young people, ethics, and the new digital media* is a timely study as Facebook, the social networking site, reputedly founded by Mark Zuckerberg in his Harvard dorm, dominated the news in 2010. In spring, the site's privacy policy prompted media debate while online identity was the subject of international media attention when Facebook reached 500 million active users in July thus making the Facebook population equivalent to the third-biggest country on Earth.

With support from the MacArthur Foundation, the Good Play Project aims to discover how young people are changing because of digital media. *Young people, ethics, and the new digital media* reports on the first phase of a current project which initially studied youth ages 15-25 who participate in online games, social networking sites, and other online communities. Drawing on evidence from informant interviews and theoretical insights from a range of disciplines including: psychology, sociology, political science, new media and cultural studies, the report explores the ways in which youth may be redefining these concepts as they engage with new digital media. Current findings show that far from being passive consumers, or perceived victims, of new media, young people are actively contributing to and defining the new media landscape through user generated content on sites such as Facebook, Myspace, Flickr, YouTube, Second Life as well as blogs and multi-player games. While the research team believes that young people are invoking and nurturing important skills through such collaborations, it is currently asking: are digital youth developing a corresponding ethical sense regarding their online activities?

Of critical interest is the manner *Young people, ethics, and the new digital media* engages with touchstones of digital citizenship: an umbrella term mainly used in North American scholarship to encapsulate participatory activity going beyond just working with technology appropriately, but establishing the basis for interaction in a global, digital society. The report authors argue that five key issues are at stake in the new media:

identity, privacy, ownership and authorship, credibility, and participation. From a British perspective, *Digital cultures*: *Understanding new media* edited by Glen Creeber and Royston Martin, also published in 2009, makes a convergence with this report on these key issues, yet, interestingly, the editors approach the utopian notion of digital citizenship more speculatively. *Young people, ethics, and the new digital media* proposes a model of 'good play' that involves the affordances of digital media; technical and media literacies; cognitive development; online and offline peer culture; and ethical supports, including the absence or presence of adult mentors and relevant educational curricula. While this model echoes distributed cognition theory developed by Edwin Hutchins (1995), its rationale owes more to constructivist learning theory, expounded by John Dewey, Jean Piaget and Lev Vygotsky amongst others, which proposes the central role of experience in human knowledge construction.

While this model echoes distributed cognition theory developed by Edwin Hutchins, its rationale owes more to constructivist learning theory, expounded by John Dewey, Jean Piaget and Lev Vygotsky amongst others, that proposes the central role of experience in human knowledge construction. The project team is currently working with Project New Media Literacies at MIT to develop a curriculum to encourage high school-aged youth to reflect on the ethical implications of their online activities. A proposed model for ethical play sets the stage for the next part of the project which will be an empirical study that will invite young people to share their stories of engagement with the new digital media. As *Young people, ethics, and the new digital media* is an interim report, proposing an engaging ideological model, it will be interesting to read further how theory unfolds in practice.

Already in the first decades of the twenty-first century we are on the cusp of a proliferation of enhanced participatory cultures mediated through user generated content – a digital hive mind. The experience of technology is not neutral it changes the rate and flow of information and in so doing it changes us in many imperceptible ways. Adopting an 'archaeological' lens challenges deterministic approaches to media history and may even assist us in mapping alternative futures.

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