Postscript on the post-digital and the problem of temporality

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(Draft chapter for David M. Berry & Michael Dieter, eds., *Postdigital Aesthetics: Art, Computation and Design*, Basingstoke: Palgrave Macmillan, forthcoming 2015).

According to Florian Cramer, the ‘post-digital’ describes an approach to digital media that no longer seeks technical innovation or improvement, but considers digitization as something that already happened and thus might be further reconfigured (2013). He explains how the term is characteristic of our time in that shifts of information technology can no longer be understood to occur synchronously – and gives examples across electronic music, book and newspaper publishing, electronic poetry, contemporary visual arts, and so on. These examples demonstrate that the ruptures produced are neither absolute nor synchronous, but instead operate as asynchronous processes, occurring at different speeds, over different time periods and are culturally diverse in each affected context. As such, the distinction between ‘old’ and ‘new’ media is no longer useful.

Yet despite the qualifications and examples, there appears to be something inherently anachronistic about the term ‘post-digital’ – as with older ‘posts’ that have announced the end of this and that. As Cramer acknowledges, one of the initial sources of the term occurs in Kim Cascone’s essay ‘The Aesthetics of Failure: Post-Digital Tendencies in Contemporary Computer Music’ (2000), and significantly in his later reassessment of his position in ‘The Failures of Aesthetics’ (2010) where he laments the ways in which aesthetics have been effectively repackaged for commodification and indiscriminate use. The past in this way is reduced to the idea of a vast database of surface images without referents (think of Facebook) that can endlessly reassigned to open up new markets and establish new value networks. The artist-theorist Hito Steyerl claims something similar in her discussion of ‘post-cinema’, describing it as a training programme for conformism as part of the ‘military-industrial-entertainment’ complex. Under these conditions, in which data goes beyond the screen, ‘too much world’ (the title of her essay) becomes available and reality itself is ‘postproduced’ (2013) – as are social relations in repressive form.

In this essay I want to speculate on the connection between the popularization of the term 'post-digital' and a wider cynicism toward the possibility of social transformation. The concept seems entangled with other forces that disavow a politics of time rendering us unable to participate or even recognise the transformative potential of historical processes. The essay will stress this political problem of temporality, by making reference to some of the discussions around the logic of historical periodization, the rise of the term contemporaneity in aesthetic theory, and microtemporality in media archaeology. To be polemic, I want to argue that we don't really need new concepts like the post-digital (or new aesthetics for that matter) but rather need to rethink the deep structures of temporalization that render our present the way it is.

Precedence for this approach might be initially found in Frederic Jameson's critique of 'postmodernity' at the height of its popularity in the early 1990s – although by now it has become a mostly discredited term. He identified the dangers of conceptualizing the present historically in an age that seems to have forgotten about history. The claim of 'new aesthetics' to expose the limits of human apperception or the 'post-digital' to collapse some of the mythologies of the digital do not seem to acknowledge their own historical conditions or time dimensions sufficiently well. It would seem that useful parallels can be drawn between a critique of post-history to the notion of the post-digital to speculate on the inherent but largely unacknowledged periodizing logic and to understand why new terms arise at particular moments and what they displace in this process. In *The Cultural Logic of Late Capitalism*, Jameson claims that the historical present has been colonized by 'pastness' displacing 'real' history (1991: 20). Has something similar occurred?

It is not that new kinds of historical knowledge do not emerge with changes in production, as this necessarily happens as an integral part of historical processes. But let's not forget the process by which concepts become appropriated by the addition of various updates and the use of the prefix 'post'. An example here would be Francis Fukuyama's use of the Hegelian assertion of the end of history (1992) – a notion of history that culminates in the present – to insist on the triumph of neoliberalism over its alternatives. This is both a reference to Hegel's *Phenomenology of Spirit* (1807) but also Alexandre Kojève's *Introduction à la lecture de Hegel: Leçons sur 'La*

Phénoménologie de l'Esprit' (1947), and his 'postscript on post-history and post-historical animals', in which he argued that certain aesthetic attitudes have replaced the more traditional 'historic' commitment to the truth.

Jameson claims that cultural changes are bound to changing modes of production and related periodizations, through which social relations can be identified. For instance, he contrasts conceptions of cultural change within Modernism, expressed as an interest in all things 'new', in contrast to Postmodernism's emphasis on rupture indicated by the addition of 'post'. To Jameson, what might be considered to be a distinct break from what went before clearly contains residual traces of it ('shreds of older avatars' as he puts it). This is exemplified by the very use of the prefix that both breaks from and keeps connection to the term in use through the grammatical gesture of a dash. So rather than indicating a distinct paradigm shift from modernism, Jameson concludes that postmodernism is 'only a reflex and a concomitant of yet another systemic modification of capitalism itself' (1991: xii), and thereby offers insights into the contemporary mode of the commodification of culture and aesthetic production. It also reveals the inherent contradictory nature of any claims associated with it.

Making reference to Daniel Bell's popular phrase 'postindustrial society' at the time of writing, instead Jameson argues for the term 'late-capitalism' (allegedly taken from Adorno) to reject the view that new social formations no longer obey the laws of industrial production and so to stress the importance of class relations. Here he is also drawing upon the work of the Marxist economist Ernest Mandel in *Late Capitalism* (1972) who argued that in fact this third stage of capital was in fact capitalism in a purer form – with its relentlessly expanding markets and guarantee of the cheapest work-force. If we follow this line of logic, how do we understand the post-digital under the conditions of informational capitalism? What are its breaks and residual traces? What is being displaced?

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To proceed with the discussion, it should be understood that Jameson adopts Mandel's 'periodizing hypothesis' or 'long wave theory' of expanding and stagnating

economic cycles to explain developmental forces of production. Growth is explained in parallel to the previous period's stagnation. Three general revolutions in technology are described, in close relation to the capitalist mode of production since the 'original' industrial revolution of the late 18th century: Machine production of steam-driven motors since 1848; machine production of electric and combustion motors since the 90s of the 19th century; machine production of electronic and nuclear-powered apparatuses since the 40s of the 20th century (Mandel, 1972: 119). Correspondingly Jameson characterises these as: market capitalism; monopoly capitalism, or the stage of imperialism; multinational capitalism (1991: 35) – each expanding capital's reach and effects. He then relates these economic stages directly to cultural production, as follows: realism – worldview of realist art; modernism – abstraction of high modernist art; and postmodernism – pastiche.

Although the model may seem rather crude and over-determined, these developments are to be taken as uneven and layered, without clean breaks or ruptures as previously explained. Each subsequent periodization is a negation of the previous one, but is then also negated, and so on. As an aside, the acknowledgement of what lies historically repressed provides a further link to Hal Foster's *The Anti-Aesthetic*, and his defence of Jameson's adoption of the long wave theory as a 'palimpsest of emergent and residual forms' (2002: 207), but would add that it is not sensitive enough to different speeds nor to the idea of 'deferred action' (that he takes from Freud's 'the return of the repressed'). This aspect is important for any psychoanalytic conception of time and implies a complex and reciprocal relationship between an event and its later reinvestment with meaning. However rather than speculating on characterizing a further stage related to digital computation and suitable term to assign to this, my point here is to stress that what we need is more reflection on periodizing logic in itself as a form of historical temporality in order to understand the conceptual logic that underpins the way we identify periods, movements, styles and techniques as forms of time more broadly. This is what Peter Osborne also outlines in his discussion of the temporalities of 'avant-garde', 'modern' and 'contemporary' – terms that have been largely taken for granted in the aesthetic field (2012-13).

Osborne calls for more philosophical attention to how such terms are constituted and to avoid simply using references that become fashionable at certain points in time. His

argument, itself periodizing of course, reminds us that although art is rarely of direct political significance, it does however contribute to a critical reflection on political subjectivation and does so through forms of historical temporalization. That politics is necessarily related to a conception of historical time in this way is clearly a contestable position (Osborne points to the emancipatory politics of Alain Badiou and Jacques Ranciere as examples of those that reject this (historical) role of/for history, 2012-13: 30), but his point is that the problem of temporality remains an issue regardless. It remains an ongoing problem that simply must be addressed in political discussions.

The lack of recognition that terms like the post-digital are periodizing concepts can be seen to be part of the problem. Osborne's contention is that terms like this are constructed at the level of history as a whole and so become powerful formulations.

> More specifically, they are categories of historical totalization in the medium of cultural experience. As such, each involves a distinct form of historical temporalization - a distinct way of temporalizing 'history' - through which the three dimensions of phenomenological or lived time (past, present and future) are linked together within the dynamic and eccentric unity of a single historical view. (1995: ix).

The attention to time is Osborne's way to address the problem of conceptualising historical change, but also to reconcile aspects of totalization – such as in forms of Marxist-Hegelianism. (A further paradox is the familiar critique of postmodernism in that in its critique of totalizing narratives like Marxism with its lack of attention to the complexity of history, itself became a totalising theory.) His use of the term 'contemporary' can thus be seen to be strategic:

> As a historical concept, the contemporary thus involves a projection of unity onto the differential totality of the times of lives that are in principle, or potentially, present to each other in some way, at some particular time – and in particular, 'now', since it is the living present that provides the model of contemporaneity. That is to say, the concept of the contemporary projects a single historical time of the present, as a living present – a common, albeit

> internally disjunctive, historical time of human lives. 'The contemporary', in other words, is shorthand for 'the historical present'. Such a notion is inherently problematic but increasingly irresistible. (Osborne, 2010)

The term becomes useful to deal with the complexities of time and history, if not politics, in ways that neither modernism nor postmodernism seem able to capture anymore. But the contemporary, serves to express a "deepening *contradictory complication* of temporal forms" (Osborne, 2012-13: 31).

The purpose here is in keeping with Walter Benjamin in maintaining a political view of the past that is not simply a historical one - to highlight the politics of history. Benjamin's 'On the Concept of History' (written in 1940) rejects historicist notions of the past as a continuum of progress – including of course Hegelian teleological notions of the end of history, and arguably historical materialism itself (2003). It presents a complex argument with its evocative opening reference to the machine built by Wolfgang von Kempelen in 1769 – a chess-playing automaton dressed in Turkish attire that wins every time it plays - to demonstrate that the dynamic of history (like that of the machine) is fake. The task of the historical materialist, it is argued, is to reveal the inner workings of historicism as an ideological construction, so that it can be further modified. Moreover, the emphasis on deepening contradictory complication is necessary to maintain a political view of the past that is not simply a historical one – to highlight the political temporalization of history.

The crisis of capitalism that we have experienced since the global financial crisis of 2007-08 can be understood in this way too – as a construction not least. To understand the present crisis, Brian Holmes has traced cycles of capitalist growth and the depressions that punctuate them by also referring to long wave theory. Rather than Mandel, he refers directly to the Russian economist Nikolai Kondratiev, who identified three long waves of growth underpinned by techno-economic paradigms: 'rising from 1789 to a peak around 1814, then declining until 1848; rising again to a peak around 1873, then declining until 1896; and rising once more to a peak around 1920 (followed by a sharp fall, as we know, in 1929).' (2013: 204) What Kondratiev discovered was that large numbers of technological inventions are made during the slumps, but only applied during the upsurges. Holmes explains: 'Investment in

technology is suspended during the crisis, while new inventions accumulate. Then, when conditions are right, available capital is sunk into the most promising innovations, and a new long wave can be launched.' (2013: 206)

Recognition of this cyclic pattern of renewal has become hugely influential in capitalist economics, for instance in informing Joseph Schumpeter's idea of how innovations revolutionize business practices – what he calls 'creative destruction' that later is morphed into 'disruption innovation' (associated with Clayton Christiansen and the Harvard Business School of the mid-1990s) – to demonstrate how profit can be generated from stagnated markets. In this neoliberal appropriation of Marxist economic theory (where inherent destruction becomes creative) we can also see how history continues to repeat itself in perverse ways. Is something similar taking place with digital technology at this point in time following the dotcom hype and its collapse? Is the pastiche-driven retrograde style of much cultural production an indication of business logic that seeks to capitalize on the present crisis before launching new innovations on the market? Yet before making such a bold assertion we should also be wary of other determinisms as the relays of technological innovation alone do not reveal the inner mechanisms of the broken economy, but broader analyses that reach beyond technology. Like 'too much world', Holmes reminds us of the link between the mode of production and the social relations that arise from this: 'Technology has as much to do with labour repression as it does with wealth and progress. This is our reality today: there is too much production, but it is unaffordable, inaccessible, and useless for those who need it most.' (2013: 209) A rather depressing reality is postproduced.

This position seems to concur with the overall problem of endless growth and collapse – the reification of class divisions – where old technologies are repackaged but in ways that serve to repress historical conditions rather than repurpose them. In a similar vein, like Benjamin, Jameson would have us conceive of the contemporary phase of capitalism in dialectical terms of both catastrophe and progress (1991: 47). This means to inscribe the possibility of change into the very model of change offered up as unchangeable – or something similarly paradoxical. Other kinds of innovations outside of the capitalist market might be imagined in this way but there also seems to

be a problem here in that these processes are soon absorbed back into further stages of social repression. Does the post-digital encapsulate such a reality?

What becomes clear is that neither modern nor postmodern discourses are sufficient to grasp the characteristic features of the historical present. Instead Osborne would insist that we are increasingly subject to the conditions of 'global contemporaneity' (2010). And the term 'contemporary' becomes useful inasmuch as it does not simply represent a historical period per se, but rather a moment in which shared issues that hold a certain currency are negotiated and expanded. Beyond simply suggesting something is new or sufficiently different (post-something), the contemporary poses the question of when the present of a particular object begins and ends.

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But are these various periodizations simply too mechanistic, too economically determining? Indeed, are Marxist theories of capitalist crisis – bound as they are to the development of the forces of production in order to conceptualise decisive (class) action – rather outmoded? Building on Marx's well-known assertion that 'humans do not make their own history as such but under circumstances existing already, given and transmitted from the past', it is generally considered far too deterministic these days to believe that the historical subject is ready for action once called upon by history; and that once self-recognition of conditions or class consciousness is attained they will take the right course of action (the Hegelian passage from in-itself to for-itself). Rather, historical processes are today generally understood as phenomena that are analogous to the workings of wider complex systems, in expressing ongoing processes of development and complexity, beyond the reach of a linear narrative of progress or the straightforward accumulation of knowledge.

This is where it becomes important to conceptualize history in ways that are less human-centred (or that rely on a coherent human subject) and where historical materials can be understood in ways that the human sensory apparatus cannot comprehend directly. This presents new ways of understanding and acting in the world – that exceed what is seeable, readable and knowable – that changes the way we conceptualize history. The concept of 'microtemporality' developed in the work of

Wolfgang Ernst offers a time-critical analysis for understanding this nonhuman aspect – using methods that are further explained as 'epistemological reverse engineering' to the point where 'media' (and not just humans) become active archaeologists of knowledge (2011: 239). From this perspective, the cultural lifespan of a technical object is not the same as its operational lifespan (as, for instance, in the way a radio receives an analogue signal), and there is a 'media-archaeological short circuit between otherwise historically clearly separated times' (2011: 240). Ernst's contention is that there is not necessarily a historical difference in a technical object's functional technical operation in the past and now. The claim is that rather than being bound to anthropomorphic narratives like history, alternatives can be posed that hold the potential for 'an almost ahistorical functional reenactment' (2013: 175). Reenactment can operate as a time-machine that activates an experience of media-time in contrast to the historicist notion of time.

In this way a Foucauldian 'archaeology of knowledge' is purged of its anthropomorphism, and analysis is extended beyond the human sensory apparatus to the nondiscursive realm of technical infrastructures and computer programs. Ernst's example is 'Fourier analysis' in which the machine performs a better cultural analysis than the human is capable of. For instance, in signal processing (audio, radio waves, light waves, seismic waves, and even images), Fourier analysis can isolate individual components of a compound waveform, concentrating them for easier detection or removal. To Ernst: 'Only by the application of such medial-technological tools can we explain the microtemporal level of such events.' (2011: 245)

However, and importantly, these tools or programs need to be operative in order to be 'radically present'. This is particular to technical objects that need to remain functional, based on the understanding that the 'computer does not reveal its essence by monumentally being there but only when being processed by […] calculating processes' (2011: 241). The computer is temporal in its internal structure. A simple example from programming would be the sleep function inasmuch as the program does not really sleep but waits for another process to finish or simply slows a program down for efficiency. When a program sleeps for a certain amount of time it has to keep working to make sure that it wakes up at the right time. In other words, technical objects are considered to be less historical and more processual, no longer simply

bound to the 'macro temporal processes' of history but to 'microprocessual timing', or machine-time.

In programming, to give a further example, system time represents a computer system's notion of the passing of time measured by a system clock, which is typically implemented as a simple count of the number of ticks that have transpired since some arbitrary starting date, called the 'epoch'. System time can be converted into calendar time, which is a form more suitable for human comprehension, but they are not reducible to one another. For example, the Unix system time in seconds since the beginning of the epoch translates into calendar time that is decidedly different. The simple UNIX command that draws on system time follows:

```
Last login: Wed June 14 06:39:32 on console
D05538:~ imvgc$ date "+%Y-%m-%d %H:%M:%S"
2014-06-14 14:10:41
```

Machine-time clearly operates at a different register. Although the general argument that time is now also organized technologically seems indisputable, there are some issues that relate to a politics of time that run the risk of being determining in other directions. Clearly, computational processes execute a very particular view of history, and the operations of memory and storage are key to this. In solving a given problem, the central processor takes symbols from memory, combines or compares them with other symbols, and then restores them to memory. Memory here refers to random-access memory (RAM), where programs are created, loaded, and run in temporary storage in real-time. Whether these are written to hard memory becomes an intriguing analogy for the ways in which memory is loaded into history (and how this process is ideological in terms of what becomes official history) and how data is selected, stored, processed, and also deleted in all systems.

To be clear, it is not that history is simply rejected by Ernst, but he wishes to develop a different emphasis on microtemporality – one that he considers to be a relative blindspot in media analysis. The case of the phonograph, for example, opens up other sonic registers beyond music such as noise, and in so doing registers 'nonmusical articulations', and what Ernst calls 'informative surplus' (2013: 174). Recording technologies such as this are recognized to be historical in a general sense of course -

in terms of their technical and discursive context – but also the 'mechanism itself is able to sustain an island of non historical eventuality' (2013: 182). As such the human sensory apparatus is inadequate for the recording of cultural memory and that acoustic archaeology requires the media itself. This is what he calls the '"media archaeological ear" that listens to the sound of material tradition, in fact the technically mediated *sonic* processuality of what is otherwise called history' (2013: 181).

But what is really meant by the historical in this respect, and why does it continue to matter? Again I would point to Osborne's close attention to the 'structure of temporalization (the *historically* new) which inscribes the spatial logic of social differences into a totalization of historical time' (1995: 198). It is here that the question of possibility, or should we simply say politics, arises. Osborne thinks that politics necessarily involves struggles over the experience of time, to both enable and disable various possibilities for change. We might ask what further lines of possibility for change does the emphasis on microtemporality enable and disable?

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Rather than run the risk of overlooking the potential of the macro-temporality of history in favour of the micro-temporality why not deepen the contradictions between them? In Ernst's work, contradiction is somewhat addressed in his emphasis on contingency in stochastic mathematics (in probability theory, a stochastic process is a collection of random values), and also in the recognition that there is an in indeterminism between human and nonhuman knowledge that comes close to the uncertainty principle. (The uncertainty principle asserts that no thing has a definite position, a definite trajectory, or a definite momentum, and that the more an attempt is made to define an object's precise position, the less precisely can one say what its momentum is (and vice versa).) Indeed physics, or quantum physics, provides verification that history is knowable and unknowable at the same time, and hence indeterminate. Ernst puts it this way:

> Once human senses are coupled with technological settings, man is an autopoietic temporal field, a chrono-regime of its own dynamics (or mathematics, when data are registered digitally). Such couplings create

> moments of exception: man is taken out of the man-made cultural world (Giambattista Vico's definition of 'history') and confronts naked physics. (2013: 177)

Even Hegel's apparent teleology culminating in the end of history is arguably predicated on contingency. The passage from in-itself to for-itself can be understood as a developmental process in which consciousness of conditions is derived recursively, generating a consciousness of consciousness (echoing one of the principles of second-order cybernetics). What appears is not true knowledge as such (at the end of history) but what appears to be known, adding another level of consciousness, and so on, in an ongoing iterative process with contradiction present at all levels. An understanding of adaptive systems informs this interpretation, which undermines accusations of a deterministic understanding of history (associated with Hegel and aspects of Marx), making it far more recursive – and closer to a media archaeological notion of 'recursive history' than might have been initially expected.

It is the temporal sense of incompleteness that drives transformative agency, and the ways in which human subjects seek to modify their lived circumstances knowing their experiences to be incomplete. In other words, there is not just a short circuit between otherwise historically clearly separated times but also feedback loops that describe the way the historical subject opens up possibilities to modify and self-organize. This is in keeping with the claim that machines need to function in order to be 'radically present' – they know their place in history as other 'workers' arguably do. (Mladen Dolar's re-reading of von Kempelen's automata in Hegelian terms is relevant here: as a move from a machine in-itself (the speaking machine) to for-itself (the thinking machine) (2006)). If the tools or programs need to be operative in order to be radically present, then this goes for humans too.

The complexity of historical temporality (and constitution of machinic subjectivities) requires further elaboration in one holds onto any possibility of transformation. Time is undoubtedly organized technologically but under the circumstances of existing cultural-historical-computational conditions. To concentrate efforts on understanding temporality at both micro and macro levels begins to unfold more complex and

layered problems of different kinds of time existing simultaneously across different geo-political contexts. The historical present thereby:

> is a conflicted social process of identification, interrogation and disavowal - recognition and misrecognition - of extraordinary complexity, which requires the constant production of new pasts to maintain its rhythm of temporal negation and projection, as urgently as new images of the future. (1995: 199)

The importance of this is that social forms of subjectivity are bound to politics as a dynamic force through which change can happen. This is why Osborne thinks that politics necessarily involves struggles over the experience of time, to both enable and disable various possibilities for change and action. Although technology clearly has an important part to play, doesn't this emphasize the problem of simply declaring something as post something else? When it comes to the condition of the post-digital, the analogy to historical process and temporality seems underdeveloped to say the least.

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