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## **Processual Media Theory and the Art of Day Trading**

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Over the past few years, one is increasingly able to detect the emergence of empirical approaches to the study of new media as the current dominant paradigm. An empirics of new media describes the various forms, objects, experiences and artworks that constitute new media. The empirical desire to fix all that is virtual into concrete is coextensive with a certain weariness, boredom or distrust of the excesses of “postmodern theory” that came to characterise much work going on in media and cultural studies and contemporary art during the 80s and 90s. Work carried out in sociology, international relations, and architecture has also taken this empirical turn.

These fields all share a desire to ground their objects of study, to retrieve them from the ravages of “speculative theory”, and in so doing, perhaps begin a process of reconstructing or securing disciplinary identities. Arguably, all of this coincides with the perceived displacement of national and local communities wrought by communications media such as satellite TV, the Internet, and the mobile phone. Very real displacement across social scales accompanies the structural transformations of national and regional economies in a post-Soviet era in which populations have become increasingly mobile at transnational levels as professional or unskilled labour, as refugees, or as tourists.

It is the task of empirical studies to describe and analyse these various transformations, yet to delimit such work to the scholastic mode of production is to overlook the ways in which such research corroborates the interests of capital which, in the corporatisation of universities, finds the current empirical paradigm as the new frontier of instrumental reason. Researchers, or information workers, in many instances are providing data analysis that has commercial applications in ascertaining consumer habits and, in the case of new media studies, there is the attempt to foreclose the myriad ways in which users engage with media forms and content. It's all quite desperate. And it's all related to a quest to capture markets.

The shift in media studies and other disciplines to a non-reflective and non-reflexive empirical mode is perhaps best accounted for by paying attention to the shift that has occurred in the conditions of production associated with intellectual labour within a neoliberal paradigm. What we see in this mode is a pressure for intellectual practices to become accountable. This pressure is not motivated by ethical reasons, which includes the delivery of knowledge and engagement with teaching and research in ways that are responsive both to their own disciplinary circumstances and to those who are subjects within a particular institution and its disciplinary formations. Rather, there is a need for the products of intellectual labour – intellectual property coded as a commodity object – to be accountable to the laws of exchange value.

The neoliberal imaginary seeks to subject all socio-cultural practices to the laws of the market, which are one manifestation, albeit limited, of the logic of capital. As such, a technique of verification is required, and the humanities has turned to the sciences for such a tool. This is hardly surprising, since the sciences have long held a relationship with industry, which sees the output of labour within the sciences as holding commercial and industrial application. A perception dominates within academe that assumes vulgar empirics to be the technique that best enables intellectual labour to be measured, quantified and reported in terms of stasis or stability.

The key problem of an empirics of new media aesthetics resides in its failure, in a number of instances, to understand that the aesthetics of artworks, software applications and technologies are conditioned by social relations as well as the theoretical paradigms through which analysis proceeds. Technology, as understood by Raymond Williams, is found in the processual dimension of articulation, where the media is but one contingent element that undergoes transformation upon every re-articulation.

This presents a challenge to the empirical turn in net studies, which seeks in vain to pin down a terrain that is made historically redundant prior to its emergence. Empirical approaches to the net, if nothing else, need to work in a reflexive mode that is constantly aware of the conditions attached to funded research, to critique them, to describe the institutional cultures that shape the emergent third paradigm of net studies, and to see the seemingly secure ground of any empirical moment as something which is always interpenetrating with something else.

### **Processual Aesthetics as a Critique of New Media Empirics**

In *The Language of New Media*, media theorist and artist Lev Manovich undertakes a media archaeology of post-media or software theory.<sup>1</sup> He focuses on a very particular idea about what constitutes the materiality of new media, and hence aesthetics. In excavating a history of the present for

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<sup>1</sup> Lev Manovich, *The Language of New Media* (Cambridge, Mass.: MIT Press, 2001).

new media, Manovich's work is important in that it maps out recent design applications, animation practices, and compositing techniques, for example, that operate in discrete or historically continuous modes. However, Manovich's approach is one that assumes form as a given yet forgets the socio-political arrangements that media forms are necessarily embedded in, and which imbue any visual (not to mention sonic) taxonomy or typology with a code: i.e. a language whose precondition is the possibility for meaning to be produced.

A processual aesthetics of new media goes beyond what is simply seen or represented on the screen. It seeks to identify how online practices are always conditioned by and articulated with seemingly invisible forces, institutional desires and regimes of practice. Furthermore, a processual aesthetics recognises the material, embodied dimensions of net cultures.

When you engage with a virtual or online environment, are you simply doing the same thing as you would in a non-virtual environment, where you might be looking at objects, communicating, using your senses – vision, sound, etc? In other words if the chief argument of the new media empirics lies in the idea that we simply ought to pay close attention to what people “do” on the net and ignore any grander claims about virtual technologies – is this adequate? Is there anything in this “do-ing” which deserves greater analysis?

Do virtual environments simply extend our senses and our actions across space and time, or do they reconstitute them differently? There is a strong argument made for the latter. In the same way that visual culture – especially the cinema – legitimised a certain way of looking at things through techniques such as standardised camera work and continuous camera editing, then virtual technologies re-organise and manage the senses and our modes of perception in similar ways. As Kafka once noted: ‘cinema involves putting the eye into uniform’.

Software design, virtual environments, games, and search engines all generate and naturalise certain ways of knowing and apprehending the world. We can find examples of this with database retrieval over linear narrative, hypertext, 3D movement through space as the means to knowledge, editing and selection rather than simple acquisition, etc.

So if empirics can record that we have virtual conversations, look up certain sites, and so forth – it doesn't consider *the way we combine visual and tactile perceptions* in certain ways and in certain contexts to allow for distinct modes of understanding the world. Nor does a new media empirics inquire into the specific techniques by which sensation and perception are managed. This is the work of processual aesthetics.

A theory of processual aesthetics can be related back to cybernetics and systems theory and early models of communication developed by

mathematician and electrical engineer Claude Shannon in the 1940s.<sup>2</sup> This model is often referred to as the transmission model, or sender-message-receiver model. It is a process model of communication, and for the most part it rightly deserves its place within introduction to communications courses since it enables a historical trajectory of communications to be established.<sup>3</sup>

However, as we all know it holds considerable problems because it advances a linear model of communication flows, from sender to receiver. And this of course just isn't the way communication proceeds – there's always a bunch of noise out there that is going to interfere with the message, both in material and immaterial ways, and in terms of audiences simply doing different things with messages and technologies than the inventors or producers might have intended.

The point to take from this process model, however, is that it later developed to acknowledge factors of noise or entropy (disorder and deterioration), once in the hands of computer scientists and anthropologists such as Norbert Weiner and Gregory Bateson.<sup>4</sup> As such, it shifted from a closed system to an open system of communication. In doing so, it becomes possible to acknowledge the ways in which networks of communication flows operate in autopoietic ways whereby media ecologies develop as self-generating, distributed informational systems.<sup>5</sup>

A processual aesthetics of media culture enables things not usually associated with each other to be brought together into a system of relations. A processual media theory is constituted within and across spatio-temporal networks of relations, of which the communications medium is but one part, or actor. Aesthetic production is defined by transformative iterations, rather than supposedly discrete objects in commodity form. Processual aesthetics is related to the notion of the sublime, which is 'witness to indeterminacy'.<sup>6</sup> Processual aesthetics of new media occupy what philosophers of science Ilya Prigogine and Isabelle Stengers call a 'dissipative structure' of nonlinear, random relationships.<sup>7</sup>

The concept of process undermines the logic of the grid, of categories, of

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<sup>2</sup> <http://www.cultsock.ndirect.co.uk/MUHome/cshtml/introductory/sw.html>

<sup>3</sup> See Armand Mattelart and Michèle Mattelart, *Theories of Communication: A Short Introduction* (London: Sage, 1998).

<sup>4</sup> <http://www.martinleith.com/glossary/cybernetics.html>

<sup>5</sup> See Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. Paul Bains and Julian Pefanis (Sydney: Power Publications, 1995 [1992]); Brian Massumi, *A User's Guide to Capitalism and Schizophrenia: Deviations from Deleuze and Guattari* (Cambridge, Mass: MIT Press, 1992).

<sup>6</sup> D. N. Rodowick, *Reading the Figural, or, Philosophy after the New Media* (Durham and London: Duke University Press, 2001), 20.

<sup>7</sup> See Ilya Prigogine, and Isabelle Stengers, *Order out of Chaos: Man's New Dialogue with Nature* (London: Flamingo, 1985). See also Massumi, *A User's Guide*; Isabelle Stengers, *The Invention of Modern Science*, trans. Daniel W. Smith (Minneapolis: University of Minnesota Press, 2000); Alfred North Whitehead, *Process and Reality* (New York: Free Press, 1978).

codings and positions, and it does so inasmuch as the realm of distinctions and that which precede these orders of distinction are in fact bound together on a continuum of relations as partial zones of indistinction. Categories are only ever provisional, and emerge to suit specific ends, functions, interests, disciplinary regimes and institutional realities. To this end, the mode of empirical research that predominates in the humanities and sciences – and in particular current research on new media – needs to be considered in terms of not what categories say about their objects, but rather, in terms of what categories say about the *movement* between that which has emerged and the conditions of possibility. Herein lies the contingencies of process.

The network is not ‘decomposable into constituent points’.<sup>8</sup> That is what a non-reflective and non-reflexive empirics of new media, of informational economies and network societies, in its reified institutional mode attempts to do. The network is not a ‘measurable, divisible space’. Rather, it holds a ‘nondecomposable’ dimension that always exceeds – or better, subsists within – what in the name of non-reflexive empirics are predetermined regimes of quantification, which, as Massumi has it, ‘is an emergent quality of movement’ (8).

This is not to say that things never occupy a concrete space. An analytics of space (and time), if it is to acknowledge the complexity of things, cannot take as its point of departure the state of arrest of things. Instead, attention needs to take a step back (or perhaps a step sideways, and then back within), and inquire into the preconditions of stasis. And this does not mean occupying a teleological position, which seeks to identify outcomes based on causes. Or as Massumi puts it, the ‘emphasis is on process before signification or coding’ (7).

### **The Aesthetics of News Corp**

We are yet to see what capital can become. So goes the ‘new economy’ mantra as its proponents go about laying claim to the future, which is synonymous with the ‘free market’. Mastery of the latter supposedly determines the former.<sup>9</sup> Bubble economies – exemplified in our time most spectacularly with dotcom mania and the tech wreck in April 2000, which saw the crash of the NASDAQ<sup>10</sup> – are perhaps one index of the future-present whereby the accumulation of profit proceeds by capturing what is otherwise a continuous flow of information. Information flows are shaped

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<sup>8</sup> Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham and London: Duke University Press, 2002), 6.

<sup>9</sup> See Thomas Frank, *One Market under God: Extreme Capitalism, Market Populism, and the End of Economic Democracy* (New York: Anchor Books, 2000), 343.

<sup>10</sup> As Neil Chenoweth recounts in *Virtual Murdoch*, ‘The Nasdaq composite index of high-tech stocks, which was the surest guide to the state of the tech economy, in the first three weeks of April had dropped 34 per cent down to 3200’. By 2001 the fall had increased to 90 per cent. See Neil Chenoweth, *Virtual Murdoch: Reality Wars on the Information Highway* (London: Vintage, 2002), 339.

by myriad forces that in themselves are immaterial and invisible in so far as they do not register in the flow of information itself. The condition of motion nevertheless indelibly inscribes information with a speculative potential, enabling it to momentarily be captured in the form of trading indices.

Michael Goldberg's recent installation at Sydney's Artspace – *catchingafallingknife.com* – nicely encapsulates aspects of a processual media theory.<sup>11</sup> The installation combines various software interfaces peculiar to the information exchanges of day traders gathered around electronic cash flows afforded by the buying and selling of shares in Murdoch's News Corporation. With \$50 000 backing from an anonymous consortium of stock market speculators cobbled together from an online discussion list of day traders, Goldberg set himself the task of buying and selling News Corp shares over a three week period in October-November last year.

Information flows are at once inside and outside the logic of commodification. The software design of market charts constitutes an interface between what Felix Stalder describes as informational 'nodes' and 'flows'.<sup>12</sup> The interface functions to 'capture and contain' (Massumi, 71) – and indeed make intelligible – what are otherwise quite out of control finance flows. But not totally out of control: finance flows, when understood as a self-organised system, occupy a space of tension between "absolute stability" and "total randomness".<sup>13</sup> Too much emphasis upon either condition leaves the actor-network system open to collapse. Evolution or multiplication of the system depends upon a constant movement or feedback loops between actors and networks, between nodes and flows.

Referring to the early work of political installation artist Hans Haacke, Goldberg explains this process in terms of a 'real time system': 'the artwork comprises a number of components and active agents combining to form a volatile yet stable system. Well, that may also serve as a concise description of the stock market ... Whether or not the company's books are in the black or in the red is of no concern – the trader plays a stock as it works its way up to its highs and plays it as the lows are plumbed as well. All that's important is liquidity and movement. "Chance" and "probability" become the real adversaries and allies'.<sup>14</sup>

Trading or charting software can be understood as stabilising technical actors

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<sup>11</sup> Michael Goldberg, *catchingafallingknife.com*, Artspace, Sydney, 17 October-19 November, 2002, <http://www.catchingafallingknife.com>. See also Geert Lovink, 'Interview with Michael Goldberg', <http://www.catchingafallingknife.com>

<sup>12</sup> Felix Stalder, 'Space of Flows: Characteristics and Strategies', posting to nettime mailing list, 26 November, 2002, <http://www.nettime.org>

<sup>13</sup> Felix Stalder, 'Actor-Network-Theory and Communications Networks: Towards Convergence' (1997), [http://www.erp.fis.utoronto.ca/~stalder/html/Network\\_Theory.html](http://www.erp.fis.utoronto.ca/~stalder/html/Network_Theory.html)

<sup>14</sup> Conversation with Geert Lovink, <http://www.catchingafallingknife.com>

that gather informational flows, codifying such flows in the form of 'moving average histograms, stochastics, and momentum and volatility markers' (Goldberg). Indicators of this sort also provide the basis for 'technical analysis', which is concerned with discerning the movement of prices according to the supply and demand of particular shares. 'Fundamental analysis', on the other hand, looks 'at the realities underlying price movements – broad economic developments, government policies, demography, corporate strategies'.<sup>15</sup> Such market indicators are then rearticulated or translated in the form of online chatrooms, financial news media, and mobile phone links to stockbrokers, eventually culminating in the trade. In capturing and modelling finance flows, trading software expresses various regimes of quantification that makes possible a value-adding process through the exchange of information within the immediacy of an interactive real time system. Such a process is distinct from 'ideal time', in which 'the aesthetic contemplation of beauty occurs in theoretical isolation from the temporal contingencies of value'.<sup>16</sup>

An affective dimension of aesthetics is registered in the excitement and rush of the trade; biochemical sensations in the body modulate the flow of information, and are expressed in the form of a trade. As Goldberg puts it in a report to the consortium mid-way through the project after a series of poor trades based on a combination of technical and fundamental analysis: 'It's becoming clearer to me that in trading this stock one often has to defy logic and instead give in, coining a well-worn phrase, to irrational exuberance'.<sup>17</sup> Here, the indeterminacy of affect subsists within the realm of the processual, whereby a continuum of relations defines the event of the trade. A continuity of movement prevails. Yet paradoxically, such an affective dimension is coupled with an intensity of presence where each moment counts; the art of day trading is constituted as an economy of precision within a partially enclosed universe.

However, the borders of a processual system are also open to the needs and interests of extrinsic institutional realities. The node of the gallery presents what is otherwise a routine operation of a day trader as a minor event, one that registers the growing indistinction between art and commerce. Interestingly, the event-space of the gallery expresses the regularity of day trading with a difference that submits to the spatio-temporal dependency news media has on the categories of 'news worthiness'.

A finance reporter for Murdoch's *The Australian* newspaper gives Goldberg's installation a write-up. Despite the press package which details otherwise, the journalist attempts to associate Goldberg's trading capital with an Australia Council grant (which financed the installation costs) as further evidence of the moral and political corruption amongst the

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<sup>15</sup> Doug Henwood, *Wall Street* (London and New York: Verso, 1998), 105.

<sup>16</sup> Edward A. Shanken, 'Art in the Information Age: Technology and Conceptual Art', <http://www.duke.edu/~giftwrap/InfoAge.html>

<sup>17</sup> Goldberg, Consortium Transcript, 3 November, 2002, <http://www.catchingafallingknife.com>

‘chattering classes’. In this instance of populist rhetoric, the distinction between quality and tabloid newspapers is brought into question. The self-referentiality that defines the mode of organisation and production within the mediasphere prompts a journalist from Murdoch’s local Sydney tabloid, the *Daily Telegraph*, to submit copy on the event. Unlike the dismissive account in *The Australian* and the general absence of attention to the project by Arts commentators, Goldberg notes how the *Daily Telegraph* report made front page of the Business section (rather than the News or Entertainment pages), in full colour, with his picture alongside the banner headline ‘Profit rise lifts News’. The headline for Goldberg’s installation was smaller: ‘Murdoch media the latest canvas for artist trader’.

Here, the system of relations between art and commerce also indicates the importance narrative or storytelling has in an age of information economies. Whether the price of stocks go up or down, profit value is shaped not, of course, by the kind of political critique art might offer, but rather by the kind of spin a particular stock can generate. Goldberg’s installation discloses various operations peculiar to the aesthetics of day trading, clearly establishing a link between narrative, economy, time and risk, performance or routine practice and the mediating role of design and software aesthetics. *catchingafallingknife.com* demonstrates that it is the latter – a theory of software – that still requires much critical attention. And unlike most players in the new economy, Goldberg’s installation was an exercise in accountability and transparency.

## Conclusion

There is a process at work in all this, part of which involves a linear narrative of stabilisation by structural forces. Massumi explains it this way: ‘The life cycle of the object is from active indeterminacy, to vague determination, to useful definition (tending toward the ideal limit of full determination)’ (214). Yet this seemingly linear narrative or trajectory, if that’s what it can be termed, is in no way a linear process. Quite the opposite. It is circular, or is constituted through and within a process of feedback whereby the technical object, in its nominated form, feeds back and transforms its conditions of possibility, which can be understood as ‘the field of the emergence’ (8).

So, I’m suggesting that a processual media theory can enhance existing approaches within the field, registering the movement between that which has emerged as an empirical object, meaning or code, and the various conditions of possibility. A processual media theory inquires into that which is otherwise rendered as invisible, yet is fundamental to the world as we sense it. Thus, processual media theory could be considered as a task engaged in the process of translation.



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