The Architecture of the Image

Karen Cham
Kingston University
London
k.cham@kingston.ac.uk

It is ‘post structuralism’ that offers us a working notion of images as systems of signs whose ‘semantic spaces’ are defined by networks of changing conceptual relationships. As a dialectical method it has provided useful paradigms for addressing our conceptual interaction with, and interpretation of, diverse art, design & media visualisations. However, it is limited in effectively accounting for the significant interaction between the abstractions that are media images and actual behaviours as practices ‘outstrips theoretical understanding of the relationship between the sign and the signified, the simulation and the social, the model and the real’.

In the sciences, it is ‘systems thinking’ that emphasizes a concern with relationships, systems and networks. Here, ‘emergent behaviour’ is accounted for as a recognizable characteristic of ‘complexity’; a new type of science concerning systems that are sufficiently complex as to display a capacity for ‘autopoiesis’ or ‘self making’.

The author has previously proposed that a convergence of post structuralism and complexity may allow some greater understanding of the generative feedback loop between the conceptual, computational and very real ‘semantic behaviours’ of digital culture.

Here she elaborates that as the abstractions of synergetic brand architectures and designed identity systems are used more and more to underpin user experiences, this type of distributed, networked, ‘cloud semantics’ can be recognised as the soft engineering of participatory semantic systems where the emergent actual behaviours are the intentional result of generating metaphoric ‘virtual’ avatars for us all to involuntarily inhabit as part of the natural ‘autopoetics’ of the digital age.

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1. INTRODUCTION

In the Humanities, the work of poststructuralist thinkers such as Jean Baudrillard, Roland Barthes and Jacques Derrida offers us the notion of all cultural artefacts as texts or systems of signs. Indeed, for the poststructuralist, all artefacts and practices, including the contextualising ‘grand narratives’ (Lyotard 1979) such as mathematics, science and religion, are ‘semiotic’ systems, and the semantic value or ‘meanings’ of these signs and systems are not fixed, but rather sustained by networks of relationships that change, both synchronically and diachronically.

As a dialectical method poststructuralism has provided useful paradigms for addressing our interpretation of diverse art, design & media visualizations such as magazine advertisements, cinema films and cave paintings and is core to media theory and production practice. However, it has in the authors view, some limitations in effectively accounting for the core aspects of ‘digitally interactive media’. This term is used here to refer to any media that is

’a machine system which reacts in the moment, by virtue of automated reasoning based on data from its sensory apparatus’ (Penny 1996)

Whilst post-structuralism has prefigured a number of important key aspects of digital interaction, it is anchored in the notion of interpretation, which proves limited in this context. In digital interaction the users interpretation is in many cases represented and feedback into the original artefact; interaction is significantly more reactive and participatory than interpretation which is initially at least, a conceptual private process.

As post structuralism struggles with differentiating between interpretation and interaction in this context, it also struggles to effectively account for the significant interaction between images and actual behaviours. Traditionally, media theory falls
back on Raymond Williams notion of ‘human agency’ where, by aiming to robustly juxtapose any idea of technological determinism in our consumption of television content, he fails to properly account for any intentionality on the part of the producer whatsoever.

Thirty years later, by virtue of the velocity of technological change, many digital practices

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Concurrently, in the sciences, it is ‘systems thinking’ that emphasizes a concern with nodes, relationships, systems and networks. Here, users interaction with digital media can be understood as enactive, and accounted for as a recognizable characteristic of ‘complexity’. This new type of science concerns systems that are sufficiently complex as to automatically display a capacity for autopoiesis or ‘self making’; an ideal description of the systemic aspects of digital media if not the content.

The potential relationship between poststructuralism and complexity theory in digital practice have not gone unnoticed, indeed the author herself has previously proposed a convergence of the two towards a ‘complex adaptive structuralism’ as a design methodology for digitally interactive media. In designing digitally interactive systems, the designer establishes co ordinates to define a ‘user experience’ (UX), establishing and then authoring parameters that guide and delineate a performative ‘autopoietic’ process, often with diverse outcomes. These types of ‘emergent behaviours’, are to a degree technologically determined by the design, as they are a result of a fundamental relationship between structure and function.

When expanded to the pragmatic effects of the consumption of media images, this approach allows us to perceive a generative feedback loop between the images and the ‘semantic behaviours’ of digital media culture such as brand loyalty, the trajectory of celebrity and ‘pre-mediated’ violence.

As traditional economics theory, like Williams theory of human agency, is based on the belief that people make rational decisions, it has been difficult to demonstrate causal links between images and behaviour. Branding has long been established as ‘moments of engagement between people and brands, and the associations these moments create’ (Ardill 2010) and brand identity is most often mediated by images, yet the reluctance to concede that certain types of behaviour is driven by design remains in certain fields of enquiry.

Recently however, new disciplines such as ‘behavioural economics’ are looking at how a product’s UX can even encourage user behaviours that are detrimental to ones own best interests. This design style known ominously as ‘dark patterns’, has evolved as it becomes easier to demonstrate the relationships between design and behaviour, not least as both are mediated via a digital interface. In the nascent field of ‘neuro economics’, however, even an EEG machine can detect ones exposure to ‘putative branding moments within TV commercials’. (Braeutigam 2004)

As the abstractions of synergetic brand architectures and designed identity systems are integrated into UX as a ‘cybernetic’ (Norbert Weiners definition ‘messages between man and machines, between machines and man, and between machine and machine’) version of ‘touch point orchestration’ (Abbing & Gessel 2010), expanded across analogue and digital platforms in a mixed reality experience, contemporary branding activities constitute distributed, networked, ‘cloud semantics’. This is the soft engineering of participatory semantic systems that generate metaphoric ‘virtual’ avatars for us all to involuntarily inhabit as the natural ‘autopoetics’ of the digital age. This paper argues the emergent actual behaviours are by design.

2. POST STRUCTURALISM

In the 1960s and 70s the artefacts of the mass media such as advertising, cinema and television programmes became a subject of analysis for these serious thinkers. ‘Texts’ were deconstructed and analysed from a ‘structuralist’ thinkers; a new philosophical approach to the structure and function of cultural artefacts. It was the recognition that the semantic value or ‘meanings’ of these signs and systems are not fixed, but rather sustained by networks of relationships that change, both synchronically and diachronically, that gave rise to the term ‘poststructuralist’.

The work of poststructuralist thinkers such as Jean Baudrillard, Roland Barthes and Jaques Derrida has provided useful paradigms for addressing our interpretation of diverse art, design & media images such as magazine advertisements, cinema films and cave paintings. For the poststructuralist, all artefacts and practices are understood as manifestations of relative truths contextualised by ‘grand narratives’ (Lytard 1979) such as mathematics, science and religion, which are also texts or systems of signs in flux. This is poststructuralist discourse analysis, where all sense of reality is the product of discourse. It was
Jacques Derrida who took this proposal to its logical conclusion with ‘deconstruction’; an attempt to demonstrate that any text can be deconstructed to into multitudinous interpretations irrespective of the authorial intent.

As an analytical method, poststructuralist ‘textual analysis’ can be implemented to demonstrate that initially any text has multiple interpretations anchored in contextual cultural narratives and ideologies. Textual analysis relies upon the successful implementation of the basic representational concept of a ‘sign’ which comprises of a ‘signifier’ and a ‘signified’. This scientific study of signs is known as ‘semiotics’ and poststructuralist semiotics finds its roots in the work of French linguist, Ferdinand de Saussure whose work underpins the European notion of ‘semiotics’ which focuses upon human signs and discourse; significantly different to the American notion of ‘semiology’ which is concerned with broader ‘universal’ sign systems. (Pierces semiology thus posits a potentially unworkable 56,049 different sign types. His initial triad of signs; iconic, indexical and symbolic have proved invaluable however to the Saussurian inheritance (see Cobley & Jansz 1997)).

This work is not coincidental; it is designed to promote the pasta sauce.

Post-structuralism has however, prefigured a number of important key aspects of digital interaction. Key concepts such as Barthes ‘death of the author’— the apriori that all cultural artefacts are open to interpretation, and all meanings must be ‘completed’ by the ‘reader’ had been established by post structuralist theory in the 1970s; indeed Umberto Ecos concept of the ‘open work’ has also been an established concept for over 30 years and both play out very successfully in the context of the computational arts. Lyotards definition of the ‘performativity’ of knowledge in a cybernetic society is manifest on a daily basis on the internet; even Saussure himself, almost a century ago, described spoken language as a performative system in use.

Jean Baudrillard went further in Simulacra and Simulations (1981) and introduced his concept that in an era whose communicative and semantic acts are dominated by electronic media and digital technologies, reality or the principle of the "real" is short-circuited by the interchangeability of signs. He proposes the notion that, in such a state, events no longer hold any particular sway on the subject nor have any identifiable context; they therefore have the effect of producing widespread indifference, detachment and passivity in industrialized populations. He claimed that a constant stream of appearances and references without any direct consequences to viewers or readers could eventually render the division between appearance and object indiscernible, resulting, ironically, in the "disappearance" of...
mankind in what is, in effect, a virtual or holographic state, composed only of appearances.

From the poststructuralist perspective then, we can observe in the work of both Derrida, Barthes & Baudrillard, a severance of the text from authorial intent and an absence of interaction between the text, its context and its interpretation. Thus the pragmatic effects of media images are dissolved into the flux of relationships intertwined in signification processes.

As a result, post structuralism has struggled to effectively account for the significant interaction between images and actual behaviours, falling back on Raymond Williams interpretative notion of ‘human agency’ where, by robustly juxtaposing any idea of technological determinism in our consumption of television content, this theory fails to properly account for any intentionality on the part of the producer whatsoever.

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‘outstrip theoretical understanding of the relationship between the sign and the signified, the simulation and the social, the model and the real’

This demonstrates the key problem in using post structuralism to effectively account for the main defining aspect of digitally media; its interactivity. The term is used here to refer to any media that is

’a machine system which reacts in the moment, by virtue of automated reasoning based on data from its sensory apparatus’ (Penny 1996)

Post structuralisms core concepts are anchored in the notion of interpretation, which is, the author has argued, significantly different to interaction. In digital interaction the users interpretation is in many cases represented and feedback into the original artefact; interaction is thus significantly more enactive than interpretation. Furthermore in its reactive response to structuralist thought post structuralism abandoned any notion of deterministic relationship whatsoever between the signifier and the signified, the text, its context and its interpretation, which serves only amplifies the void where notions of interactivity should lie. These relationships are neither transcendentally fixed nor entirely arbitrary but in a fluctuating, interactive feedback loop.

3. COMPLEX SYSTEMS THEORY

In the sciences, it is ‘systems thinking’ that emphasizes a concern with relationships, systems and networks. Systems thinking’ can be recognised as a dialectical method that breaks with logical and causal analyses to emphasize relationships within a whole. It can be traced from Socrates through Hegel to pragmatics and systems theory (Ball 1979). It is in Ludwig von Bertalanffy ‘General Systems Theory’ of 1969 that we find the roots of this dialectic as an applied trans-disciplinary methodology; a means of identifying systemic principles common to different ‘systems’ from different disciplines. General Systems Theory allows us to apprehend mechanical systems such as a car engine, biological systems such as the heart, or social systems such as a school, from a common theoretical perspective. Aside from their very obvious differences, all such systems are highly organised and integrated wholes whose component parts are themselves recognisable as ‘subsystems’. Furthermore, such systems can be understood as operating by means of inputs, processes and outputs to accomplish an overall, systemic goal. In this way, a system is always more than the sum of its parts. Systems can also be defined as either ‘open’ or ‘closed’, which conventionally describes the systems degree of interaction with its environment, with open systems interestingly, being more likely to prosper.

In systems theory then, a ‘system’ can be said to consists of

- Objects - the component parts (abstract or physical) of the system
- Attributes- qualities or properties of the system and its objects.
- Relationships-between its internal objects
- Environment – within which the system exists

Systems theory has become an holistic approach to scientific analysis that views whole systems based upon the links and interactions between the component parts, their relationship to each other and the environment within which they exists. It is a type of thinking that is useful to apprehend dynamic phenomena such as networks, interactions and processes and stands in stark contrast to conventional science, based upon Descartes’s reductionism, where the aim is to analyse a system by reducing something to its component parts. (Wilson 1998)

As is apparent, systems theory is a way of thinking rather than a specific set of rules, and similarly there is no single unified Theory of Complexity, but several different theories have arisen from the natural sciences, mathematics and computing. As such, the study of complex systems is very interdisciplinary and encompasses more than one theoretical framework. Whilst key ideas of complexity theory developed through artificial intelligence and robotics research, other important
Contributions came from thermodynamics, biology, sociology, physics, economics and law.

In her volume for the Elsevier Advanced Management Series, “Complex Systems and Evolutionary Perspectives on Organisations”, Eve Mittleton Kelly defines some generic principles of complex systems as:

- self-organisation
- emergence
- interdependence
- feedback
- space of possibilities
- co-evolving
- creation of new order

These principles can just as easily be traced in virtual systems as they can in real ones, for example, a digitally interactive environment such as the world wide web, clearly demonstrates all the key aspects of a complex system. Indeed, it has already been described as a ‘complexity machine’ (Qvortup 2006). In his 2006 paper, Lars Qvortup describes the internet itself as a ‘complexity machine’ and described the international crisis provoked by the publication of a cartoon of the prophet Mohammed, as a ‘communications event’ (Qvortup 2006). This is rationally demonstrated when comparing the traditional top down model of news generation, distribution and consumption to the “emerging media eco-system” (Bowman & Willis 2003). It is clear there is some form of causal relation between the image, the system and the behaviour.

It is in design for interactive media arts, where algorithms meet images, and the user can interact, adapt and amend the artefact, that self-organisation, emergence, interdependence, feedback, the space of possibilities, co-evolution and the creation of new order are embraced on a day to day basis by artists, designers and users alike.

Figure 3: Traditional top down model of news generation, distribution and consumption (Bowman & Willis 2003)

Whilst post-structuralism has prefigured the processes of interaction in digital media to an extent, a complex notion of language systems accounts for emergent behaviours rather than simply emergent interpretations. This helps us design for digital interaction and anticipate user experiences. When expanded to the pragmatic effects of media, this approach also allows us to perceive a generative feedback loop between media images and the ‘semantic behaviours’ of digital media culture such as brand loyalty, the trajectory of celebrity and ‘pre-mediated’ acts of violence where representation of the act seems integral to the crime on the part of the perpetrator.

Figure 4: The “emerging media eco-system” (Bowman & Willis 2003)

The recent work of Ira Livingston sets out this notion of an ‘autopoiesis’ or ‘self-making’ capacity for language based systems. Livingsons ‘autopoetics’ or ‘the convergence of words and things’ is based on the proposition that a language based system is

‘of the world, like galaxies and ecosystems…it participates in what it represents’ (Livingston 2006)

Figure 5: Person as a co-evolving media product

4. DESIGNING EMERGENT BEHAVIOURS

Branding of course, has long been established as ‘moments of engagement between people and brands, and the associations these moments
create’ (Ardill 2010). We know that users experience of brands feedback into the brand identity itself; one only needs to think of Gerald Ratner’s ill thought out comments that the earrings sold in his shops were

“cheaper than a prawn sandwich but probably wouldn’t last as long”

to understand how easily the ‘emperors clothes’ of a successful brand can evaporate; within weeks the share price of ‘Ratners’ decreased by £500 million and his large UK chain of jewellers closed down (http://www.mpowerpeople.co.uk/2011/05/7-ways-that-being-too-real-on-twitter-can-kill-your-business/). Whilst in the nascent field of ‘neuro economics’, even an EEG machine can detect ones exposure to ‘putative branding moments within TV commercials’. (Braeutigam 2004)

As it becomes easier to demonstrate the relationships between design and behaviour, not least as both the design and the behaviour take place via a GUI, new disciplines such as ‘behavioural economics’ are looking at how a product’s UX design can even encourage user behaviours that are detrimental to users’ best interests; a design style known ominously as ‘dark patterns’. (Brignull 2010)

Dark Patterns are not bad design, deriving from ignorance, laziness and a lack of attention to detail etc. Dark Patterns are designed systems that have been

‘crafted with great attention to detail, and a solid understanding of human psychology, to trick users into do things they wouldn’t otherwise have done’. (Brignull 2010)

We can see from dark patterns that it is really not that difficult to design for intended user behaviours through GUI based systems. Thus, brand identity is being rapidly integrated into UX and expanded across analogue and digital platforms in a mixed reality user experience; so its no longer a case of real experiences feeding back into our perception of a brand identity but of a co-evolving ecosystem of associations in a ‘cybernetic’ version of ‘touch point orchestration’ (Abbing & Gessel 2010).

The author has previously proposed a convergence of the poststructuralist and complexity theory as a means of understanding the ‘material’ qualities of digital media cultural systems (Cham 2007). It is a proposal built upon the basis of a theoretical continuum from Saussurian linguistics and the concern with synchronic systems and performance; it predicates post structuralism and the role of the ‘reader’ in ‘completing’ the emergent meaning of ‘open’ texts and integrates systems thinking and complex systems theory with systems art and digital media.

This ‘Complex Adaptive Structuralism’ allows us to understand more about the complex adaptive systems of media culture as a whole and raises important questions about the generative capacity of representation per se within a solid theoretical framework. As a design methodology it is a proposal for a ‘Reconstruction Theory’; whereas Derrida’s deconstruction is ‘fractal’ textual analysis of the conceptual interpretive systems of the reader, Reconstruction Theory is a design methodology and critical tool regarding the intentional authorship of a space of possibility in complex media for emergent behaviours, as part of any complex text that is intended to be interactive such as an installation, networked web communities and massively multiplayer games.

‘When designing digitally interactive artifacts we design parameters or co ordinates to define the space within which a performative autopoietic process will take place. We can never begin to predict precisely what those processes might become through interaction, emergence and self organization, but we can and do establish and then author parameters that guide and delineate the space of possibilities’. (Cham 2007)

As the abstractions of this type of synergetic brand architectures and designed identity systems are used more and more to underpin user experiences, this constitutes in effect distributed, networked, ‘cloud semantics’ as part of the soft engineering of participatory semantic systems where the emergent actual behaviours are the intentional result of generating metaphoric ‘virtual’ avatars for us all to involuntarily inhabit as a driver of the natural ‘autopoetics’3 of the digital age.

6. CONCLUSIONS

Digital media is forcing our understanding of interactivity between representation and the real as

‘the terms art, design and media converge into a process driven, performative event that demonstrates emergence through autopoietic processes’

The void between the signifier and the signified is the interaction between polarized conceptual constraints inherited from Rene Descartes (In the Philosophy of Mind, Rene Descartes states that the immaterial mind and the material body are separate and that they interact with each other.). We struggle to understand the interaction between the conceptual (non material) and the physical (material)“ as we struggle to rationally integrate the notions of mind and body unified in embodied interaction with immersive interfaces as the
conceptual is increasingly mediated and then materialized.

Whilst post-structuralism prefigures the processes of digital interaction to an extent, a complex notion of language systems accounts for emergent behaviours rather than simply emergent interpretations. This immediately crosses the Cartesian void between signification and the real.

Furthermore, it appears that some type of autopoiesis is at play here across that void; not only that language systems and behaviour patterns are complex systems themselves, and part of the complex nested system of culture in dynamic, interactive relation, but that they are equally ‘real.’ In this realm of autopoetics, signification is best understood as a dynamic intermediate realm between the real and the conceptual; an interactive interface to the real, which can best be understood as a realm of invocation; all representational systems have a performative capacity for transformation of the real.

The ‘Architecture of the Image’ is an expanded participatory construction, a distributed ecosystem of signifiers and signifieds; of denotations and connotations, across virtual and real spaces. Digital media allows such conceptual nodes to be represented, apprehended and tracked. Digital behaviours are represented behaviours that can be observed, as we perceive, consume and inhabit the chimera of our time.

7. REFERENCES


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