Montage as a participatory system: interactions with the moving image

by

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Abstract

Recent developments in network culture suggest a weakening of hierarchical narratives of power and representation. Online technologies of distributed authorship appear to nurture a complex, speculative, contradictory and contingent realism. Yet there is a continuing deficit where the moving image is concerned, its very form appearing resistant to the dynamic throughputs and change models of real-time interaction. If the task is not to suspend but encourage disbelief as a condition in the user, how can this be approached as a design problem? In the attempt to build a series of design projects suggesting open architectures for the moving image, might a variety of (pre-digital) precursors from the worlds of art, architecture and film offer the designer models for inspiration or adaptation?

A series of projects have been undertaken. Each investigates the composite moving image, specifically in the context of real-time computation and interaction. This arose from a desire to interrogate the qualia of the moving image within interactive systems, relative to a range of behaviours and/or observer positions, which attempt to situate users as conscious compositors. This is explored in the thesis through reflecting on a series of experimental interfaces designed for real time composition in performance, exhibition and online contexts.

Position

Historically interactive media’s relationship with the moving image has been an uncomfortable one. Since the advent of digital video, enabling the moving image to become a component in a screen-based multimedia, designers, artists and other producers of moving-image material have sought to reconcile the linear, archival media of video with the dynamic throughputs of the telematic environment.
Attempts to accommodate these theoretically and formally opposite positions (linear/narrative film vs. open-system models) largely produce a neutered, point-and-click browsing mode of interaction of little interest to either viewers in the traditional sense or would-be participants. More recently, the focus of designers has moved away from adaptation of narrative constructs (hypermedia) towards acknowledging the importance of genuine participation on the part of the user.

Real-time, multi-user, continually updating interactive systems of distributed authorship have created new conditions for the moving image. Potentially, what was previously underneath in such image systems, i.e. issues of authorship, addressee, reception and feedback are now foregrounded as never before. The research argues that far from being problematic for moving-image culture, itself hitherto wedded to a century of film theory contingent on the essential passivity of its audience, this represents an opportunity for interaction designers and artists.

**Author’s Declaration**

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

A programme of advanced study was undertaken, including the production of six pieces of practice research to prototype and test issues arising from the study in various forms and public forums.

As an online doctoral candidate I attended three mandatory ten-day face-to-face Composite Sessions each year 2004 - 2006. Each session involved three days of individual research updates presented for discussion by the group; a three stage critique by all members of the group in respect of each others work; individual supervisory tutorials; a public symposium or conference; and a one day cultural visit.

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**Composite Sessions Attended**

- Composite Session & Research Conference. SESC. Sao Paolo, Brazil. Winter 2006.

Plymouth University, UK

- Composite Session & Research Conference. Winter 2005. Transmodalities: Mind, Art New Media, Sabanci University, Istanbul, Turkey
- Composite Session & Research Conference. Ciber@RT. Spring 2004. Bilbao, Spain

Subsequently I have published my work in the peer-reviewed journal Design Ecologies & given papers at NABA Milan and the Architectural Association, London.

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Contents

2 Abstract

5 Contents

8 Introduction

17 The Field

17 Nostalgic Analogues
30 Read-through 2004 & Shoot/Get Treasure/Repeat 2009

38 Architectures of participation
50 www.dayfornight.tv 2003/04

53 Critical Design
70 Curriculum Design & The Mineral Tramway [teaching project] 2010

80 Montage Politics
91 Russell Sq. 2005/2010

96 The Television Work of Jean Luc Godard
107 O.M. [open montage] prototype 2011/13

123 Reflection & notes toward future practice

129 Conclusion

132 References

138 Papers & presentations given

145 Bibliography
Thesis Structure

The thesis is divided into two main categories. The 5 contextual themes situate current debates and practice in the field as reflected in an alternative history of media-art [precursors] which sought to re-align the traditional positions of author and spectator in practices of avant-garde theatre, cinema, art, architecture. The last of these themes draws particularly on the television work of Jean Luc Godard, which the author suggests offers a persuasive design template for a self – reflexive and participatory moving image interaction design.

The practice sections critically reflect on 6 projects in a field linking the moving image with interaction design. Strategies from the themes are re-iterated and tested alongside present imperatives of communication design. The interface design projects are thus used to problematise and examine the potential of *montage as a participatory system*. The outcomes of these projects are then analysed.

In terms of identifying the field of the research and a literature review the thesis is organized into 5 thematic chapters. Each of these maps to an area of the practice in the following way.

1. Theme: **Nostalgic Analogues** > Practice projects: *Read-Through & Shoot, Repeat, Get Treasure*  
   This chapter reflects on the 1960’s period of art & technology collaborations.

2. Theme: **Architectures of Participation** > Practice project: *www.dayfornight.tv*  
   This chapter moves the model forward into the digital era of real time networked collaboration.

3. Theme: **Critical Design** > Practice project: *Digital Media Curriculum Design*  
   This chapter examines critical dialogues of user & society within neoliberalism.

4. Theme: **Montage Politics** > Practice project: *Russell Square*  
   This chapter imagines montage as a practice of everyday life.

5. Theme: **The Television work of Jean-Luc Godard** > Practice project: *O.M. Prototype*  
   This chapter concludes the practice, using Godard’s work as a reflexive toolkit.
The enclosed DVD features a section for each area of practice as follows;

www.dayfornight.tv 2003/04
Exhibited:
Online 2003 - 2006
The sequence shows several still screen captures from the web site, followed by a video sequence depicting one of the animated sub-sections nested within the overall site.

Read-through 2004
Exhibited:
Auto Festival, Sheffield 2004
The sequence shows several still screen captures from an installation, followed by a video sequence.

Shoot/Get Treasure/Repeat 2009
Exhibited:
Chapter Theatre, Cardiff 2009
The video shows video material designed for a production of the Mark Ravenhill plays.

Teaching Projects 2010-Present
BA Digital Media U.C. Falmouth 2010
The video shows screen-captured footage of the BA Digital Media course web space. A number of teaching projects are demonstrated.

Russell Sq. 2005/2010
Exhibited:
Dartington College of Arts Performance Centre 2010
The video shows an installation where movement sensors control the playback of a 2 layer video.

O.M. [open montage] 2011
[A project of several components]
1 media ecology
2 the rgb splitter
3 IMAGE the video & image composition grid
4 SOUND the audio compositor
5 TEXT the typographic editor
Exhibited:
RCA Sculpture School, London 2011
The video shows the prototype system being demonstrated.
At the beginning of the known history of Western thought, Democritus proposed a philosophical vision of a "compositionist" kind. There is no object, no existent, and no person: only aggregates, temporary atomic compositions, figures that the human eye perceives as stable but that are indeed mutational, transient, frayed and indefinable. (Beradi 2009: 120)
The objective of the research is to suggest alternative approaches for designing moving image based interactive experiences, or multimedia experiences in which the moving image is an active component. Therefore, the intention is to demonstrate models suggesting methodologies for the useful integration of the moving image in interaction design.

The identification of particular themes within the research field allows design problems to be framed, both for the purposes of discussion in the thesis and in order to develop analytical practice projects. The research is practice based and the various practice projects which have been made are used to problematise and test some of the questions emerging from the research. In the case of the teaching project that I refer to in the thesis, this approach is termed problem based learning. It is possible to extend this definition in spirit to all of the practice. Following the four thematic sections the video practice of Jean Luc Godard is considered as of particular interest. The form of cinema Godard developed, incorporating its own interrogating language, appears to offer a design type, which could be purposefully adapted for interactive media systems. As Jameson says of late Godard:

His strategy is to pose the strongest objections to the medium – to foreground its most urgent problems and crises ... in order the more triumphantly to surmount them. (Jameson 1995: 159)

The range of art historical precursors also establish the context for the practice research projects undertaken. One of the design questions taken into the projects was to consider whether the reframing of relationships between information & user as an architecture, or as art system in the historic examples cited could be used or adapted outside of the cultural spaces of high art. What the practice has been attempting, in various forms, is a staging of prior process-relational artistic strategies in the domain of moving image interaction design, where other imperatives largely hold sway. The potential of montage as a participatory system has been explored in several practice contexts as a consequence of this research.
List of projects

1. www.dayfornight.tv 2003/04 – a participatory web space

2. Read-through 2004 – a recombinant system using performance material


4. Shoot/Get Treasure/Repeat 2009 – screen design for theatrical performance

5. The Mineral Tramway 2009/10 – an undergraduate Digital Media teaching project

6. O.M. 2010 – an experimental software application for the compositing of images, sounds & texts
The research and practice projects undertaken constitute an investigation into the potential usefulness of the moving image within contemporary interactive communication systems.

It suggests that the dissolution of form occurring for example in wiki spaces currently has no parallel with regards to the moving image. The sceptical position from which images are now viewed vis-à-vis their acquisition and distribution has no formal equivalence in relation to the materiality and experiential quality of moving images themselves. Therefore, among the research questions these projects are engaging with are:

• How may interactive systems be designed that nurture a latent potential in the moving image to become the hub through which interpretations flow, rather than a limited ‘file type’ unsuited to its media container format, or worse the fixed product of an individual auteur?

• How can the moving image become instrumental in the advancement of understanding and communication via interactive systems, particularly in the context of complexity and difference, an infinite diversity of perspectives and experiences that are irreducible to a single image or series of images authored by an individual artist?

A wiki movement image

Whilst the emergence of nuanced discourse in a message thread in a web forum, or the transformations of a wiki page follow a conversational model of component interactions, there is a deficit with regard to the transformative potential of the moving image. Data visualisation projects have proven to be adept at representing serial edits to a wiki page, or live data moving around a network, yet real time transformations of moving images are rare. In such a situation, new tools and theoretical frameworks are required to evolve the moving image beyond reductive binaries such as figuration–abstraction/subject–object.
A shift has taken place from a period of aesthetic simulation / models of flow in artworks, visualised in poetic terms e.g. Hakke’s “Blue Sail” / Ascott’s “Change Paintings” to one of actual flow for which there is no top down aesthetic. In its absence what has become dominant is the ‘database aesthetic’. I argue there is a need to challenge already present sets of limiting usability norms in this emergent culture, particularly in relation to the usefulness of the moving image within it.

Another novel communication situation involves conversations around a piece of media—for instance, comments added by users beneath a Flickr photo or a YouTube video that respond not only to the media object but also to one another. Such conversation structures are also common in real life: think of a typical discussion in a graduate film studies class, for instance. However, web infrastructure and software allow these conversations to be distributed in space and time—people can respond to one another regardless of their respective locations, and the conversation can, in theory, go on forever. The web is, in fact, millions of such conversations taking place at the same time.

(Manovich 2008: 76)

Where participatory flows are occurring in networks, they are often invisible, or only made visible to users in a manner determined by the imperatives of database software, wiki revisions or Facebook profiles. Data visualization projects have manifested these statistical phenomena in kaleidoscopic variation. YouTube/Vimeo’s text-based annotation however, valorised here by Manovich, illustrates the way in which the digital moving image continues to resist the ebb and flow of discursive activity taking place in real time around it, as yet unable to penetrate or alter the form of the material being referred to. What are the alternatives to this?

Perhaps the post-production stages of moving image material might offer more useful metaphors for the interaction designer, being more closely related to the contingency of real time collaborative networks. A comparable situation also exists during pre-production, where critical questions are
asked – where will we shoot – an image of what – who is speaking – and to whom? Both these states have more design potential in terms of an interactive architecture than the artefact the ‘new media’ industry tried and still wishes to adapt – the ‘locked’ film itself. During the editing process, where meanings are still fluid an editing suite, in the now old fashioned sense, with a bank of monitors displaying individual shots and sequences still in play could present users with multiple possibilities for communication. These potentials are collapsed into a fixed outcome once the images / sounds / texts pass through this process towards eventual fixity and distribution. As such, this other state of being; communication being created, is useful to suspend and analyse – not as a site of established montage and auteur theory, but as a phase-space whose attributes could be applied to interactive environments.

A shifting and unstable contingent montage form is therefore of interest. How would this differ from established film and television language, and why does it appear problematic to even imagine or develop. The answer perhaps lies in the questions coupling the moving image to the film and TV industry. The fixity of form inherent in the industrial models that owned the moving image in the last century are so dominant it is difficult to speak of it without mentally remediating 100 years of film theory.

<embed movie>

The situation with regard to the moving image in interactive systems has been one of embedding an art form that has its own creation and reception theory, and re-mediating it inside browsing architectures that allow the user to trigger sequences, and perhaps re-order some material. These are essentially passive behaviours. Although we may be required to perform a few clicks or consider some options from time to time we are still viewing static material produced by others for our consumption. The real interactive tele-vision therefore, would have been one that required us to purposefully author, respond, contribute, and assume responsibility for our role as participants in
consuming the images we view, that have been produced on our behalf by others. This would be to confront the issues which artists and filmmakers seeking to re-align the architecture / systems of exchange of images and information have been calling our attention to for decades.

Much of the interactive media that is using moving images is still invested in ideas of “interactive narrative” of some variation or other, or otherwise producing a style of montage that whilst being driven by algorithmic, user modified or database cinema aesthetics still appears to aim to produce a totalizing experience for its viewer / users. Perhaps the design of these systems is informed by the belief that in order for interactive systems to compete with cinema & television, new media has to provide an experience at least as rich and immersive. The kind of over-coding present in some linear media e.g. use of a particular seductive visual style, complimentary mood music and even voice over persists in interactive or computer mediated video work.

In Experimental Cinema In The Digital Age, Malcolm Le Grice reflects on the apparently inherent problem of trying to establish other potential modes of operation for the moving image:

The predominance of the narrative form in our culture makes it difficult to establish any critical distance allowing narrative to be seen as one particular form of representation rather than a ‘natural’ and inevitable system. As Renaissance perspective is a mode of spatial representation among other modes (maps, diagrams, isometric projections or Cubist space for example), so linear narrative is one method by which events in time and their causal relationships may be represented. In this sense narrative form is a representational model; it is a tool by which human beings grasp and structure their understanding of the world. While being appropriate in certain circumstances it also has shortcomings; it is well suited to representing certain forms of temporal linkage but incapable of modeling others. Its form imposes a philosophical bias (an ideology) on its subject and because of its predominance we are blind to the limits of its ‘truth’ and level of generality as representational system. (Le Grice 2001: 244)

Interactive arts, if it is to mean anything, must privilege experience; doing over representation and viewing. Interactive experiences are also real time, collaborative and evolutive, rather than archival or fixed. That being the case, what does a representational system of images have to offer?
This research refers to several experimental practices that confront the cinematic / televisual language’s apparent inability to accommodate models of change, complexity and image transformation. What seems equally problematic, and therefore where this project begins, is the remediation of precisely these same crises around our relationship with moving images, which have been at issue for some time, into an interactive, sometimes fully participatory and real-time data space which only serves to intensify the communicative deficit.

It is ‘early cinema’ or pre-cinema optical devices that many artists and theoreticians have sought to examine in an attempt to decouple the moving image from linear narrative or a dominant auteur theory. The design projects referred to in this thesis are also informed by the period defined as ‘expanded cinema’ where composite image-making and participatory strategies were core formal and philosophical components.

**Documentary disavowals revisited**

I am not claiming that there is anything intrinsic to digital media that promotes scepticism. The most commercial uses of this technology work in the opposite direction, for example through the use of digital compositing techniques to retouch, colour correct, and even add new details to the mise-en-scène of commercial motion pictures, always with the intention of a seamless result. Illusion rather than critique is the defining aim of such digital tools. (Renov 2001: 102)

Whilst Renov correctly identifies the tendency of digital tools to offer prescribed outcomes, relative to the industrial function they were developed to serve, in the decade since his article was published developments in network culture, aided by increased bandwidth and portability of digital video formats may finally point to the emergence of just such a sceptical field of practice. He also states:

Documentative work that invites radical doubt, ambivalence, the embrace of contingency rather than certain knowledge ought not be viewed as simply fashionable or facile in its skepticism. For its value exists both as challenge and affirmation: provocative in its refusal of individualist truth, profoundly moral in its call for and reliance on individual moral responsibility. (Renov 2001: 108)
Social sculpture

The research project shares with Renov an interest in the latent potential for such an interactive movement image, grounded in a contingent realism of communicative purpose. I attempt to outline theoretical and practical steps towards this objective. It is also argued that a changed relationship with moving image media is urgently needed. In that regard the urgency of the following statement by Joseph Beuys can only be amplified in the current global context.

So I think that only the art and the idea of creativity and self-determination being in the process of creativity is able to come to an alternative society ... I think from the point of view of the future, the present days are such criminal doings and practices, that in a hundred years or may be in fifty years, the youth will nothing hate so much than the practices of our days now; because in reality these are very criminal activities in all fields of the social body, in the field of the so called free spaces, in the so called culture, in the school system, in the education, in the information level, in the mass media, in the newspapers and so on. (Beuys 1988: 28)
Chapter 1: Nostalgic Analogues

Practice research projects: “Read-through” / “Shoot, Repeat, Get Treasure”
Experiments In Art & Technology

Forced Education; Moving Being

User Modulation

Image Transformation

The Artist As Design Scientist

Cage, Cunningham, Composites

Baldesari & Paik

Mixed, Multi & Hyper-Media
**Experiments in Art & Technology**

This chapter reflects on theory and practice from the mid 1960’s onwards at the interface of technology and the contemporary arts. There has been a revival of interest in this period in recent years, perhaps as a consequence of a generation of digital natives seeking a poetics of technology that now appears absent? For me, this poetic is located in the aesthetic possibilities of a real time montage in becoming. This aspect of the research sets out to analyse the quality of montage created by these works. In several of them, the accumulation of layers of media; images, sounds, texts, movement actions in time and space [for example the theatre or gallery space] become a real time assemblage in the consciousness of the observer.

The nostalgia of the title therefore relates to such media arts environments where combinations of electronic devices and assemblage techniques were not yet components of a totalizing media architecture, such as users experience in the a-priori digital multimedia of a contemporary operating system or networked hypermedia. Rather, in many of the works discussed, the bringing together of film, slides and pre-recorded sound in combination with live movement and voice, actuated an assemblage of discrete technologies. These technologies [film, photography etc] had their own formal languages. The new composite space worked with these formal properties to produce a useful tension, a new language in development.

At this time there also appeared to be a palpable sense of technological and artistic change being conflated with broader social and political change, as evidenced here by Youngblood in “Expanded Cinema”:

The human condition, as this millennium draws to a close, is one of decreasing intervals between increasing emergencies until nothing but emergency exists. We have nothing to lose. Spiritually we have nothing to lose because there is only sorrow in the values of the past and we have no tears left. Physically we have nothing to lose because we know that wealth can neither be created nor spent, that it goes nowhere and always increases with use. (Youngblood 1970: 47)
The research began by focusing on artists active at the interface of art and technology in this period; projects such as E.A.T., events such as Cybernetic Serendipity, aspects of the work of Paik, Beuys, Rauschenberg, Hakke, Cage and Cunningham. This chapter refers to some such works, which have influenced the practice directly through first person encounters. It is not an exhaustive survey but fragmentary. In his essay on the period Edward Shanken writes:

For the November 1, 1967 issue of E.A.T. News, Kluver and Rauschenberg collaborated on a statement that expressed the “urgency we feel about the need for a new awareness and sense of responsibility” regarding the relationship between art and technology, and the long-range goals of E.A.T.:
* Maintain a constructive climate for the recognition of the new technology and the arts by a civilized collaboration between groups unrealistically developing in isolation.
* Eliminate the separation of the individual from technological change and expand and enrich technology to give the individual variety, pleasure and avenues for exploration and involvement in contemporary life.
* Encourage industrial initiative in generating original forethought instead of a compromise in aftermath, and precipitate a mutual agreement in order to avoid the waste of a cultural revolution. (Shanken 1998: 4)

**Forced Education; Moving Being**

It seems appropriate to acknowledge the influence of my family who were involved in a related enterprise, the development of a *mixed-media theatre* during the late 1960’s onwards. Their company, Moving Being, formed in 1968 was among the first in Europe to combine theatre / dance and what would now be termed performance technology, as described here by the Village Voice:

Moving Being is the most committed attempt in England to refertilise the archaic notions of dance. Moore works with assemblages; his materials include movement, space, colour, film, text, and some less-definable elements one tends to call <prejudices>. At the heart of his work is a set of palpable prejudices about society, aesthetics, entertainment, politics. Warholianly brash, his ‘ballets’ incorporate advertising images, sales slogans, supermarket trolleys, flying wheelchairs and almost anything you might think related or incongruous to such an aggregate. His territory is that new zone, only recently opened up by Cage and Cunningham, Warhol and the Becks, where theatre, dance, film, music and painting all share control equally. (Village Voice 1988: 15)

In Digital Performance, A history of new media in theatre, dance, performance art and installation

Steve Dixon writes of the company:

Moving Being created visually compelling large-scale theatre performances with a "Wilson-esque" sense of pageant and grand, operatic design, which skillfully incorporated 16mm film and video projection... Moving Being was the foremost British multimedia theatre group of the '60s and '70s, bringing together actors, dancers, musicians, film, and video to create intensely dramatic, complex,
and at times sublimely beautiful stage works. In 1975, The Guardian newspaper described them as "a company of eight performers in partnership with twentieth century technology [who] create a rich theater tapestry," adding that director Geoff Moore was "a master" of a new language of multimedia theater." (Dixon 2007: 100)

Reflecting on an early childhood where I was routinely exposed to such unorthodox juxtapositions of images, movement, sound and text, it is clear that my dissatisfaction as a designer with the way in which the moving image is organised in its more prosaic form [in narrative Film and TV culture] is linked to this somewhat alternative education in montage. Activity around the image, its real time transformation; the image in a continuous dialogue with other elements becomes more important than images, or traditional narrative / representational modes in my projects. In this sense, the projects constituting this research are attempting to reconcile what I know to be not only theoretically but also practically possible; how the moving image might perform as a component in a *machinic assemblage*, with interaction design imperatives around usability that continually frustrate this potential.

In Deleuze and Guattari’s conception of the machinic assemblage there is no hierarchical or central order or organisation. In such an assemblage, the provisional linkage of elements, fragments and flows, includes ideas, things - human and non-human, animate and inanimate - and these exist on the same plane. They all have the same praxiological status: An assemblage has neither base nor superstructure, neither deep structure nor superficial structure; it flattens all of its dimensions onto a single plane of consistency upon which reciprocal presuppositions and mutual insertions play themselves out. (Bolt 2004: 80)

The way an audience was situated in many Moving Being productions placed them within a kind of montage *field*, which can be compared to the Deleuzian assemblage described here by Bolt.

An assemblage combining pre-recorded and real-time elements. This *field* replaced the proscenium arch or attention focus of traditional narrative with a complex array of simultaneous design elements. The way in which this design prejudice continually asserts itself in the projects that form this research [visual and audible layering, structural open-endedness, mixed media] are part of an aesthetic toolkit developed perhaps rather unconsciously, latterly becoming more deliberate. In a later discussion of further projects, this flat ontology is developed as a user experience in the
concatenated images & sounds of O.M. prototype [chapter 5].

User Modulation

Works like Rauschenberg’s *Revolver [1967]* where the user is able to control an array of rotating Perspex discs, each with different images printed on them and the voice activated imagery of *Soundings [1968]* are tangible precursors to the mixed reality interfaces of today. Contemporary shows by Tacita Dean at Tate Britain and Stan Douglas and Dan Graham at the Serpentine gallery had a similarly energising effect on me as evidence of a type of participatory work re-emerging in a new context much more recently. In the case of Douglas in particular, developments in technology enabling the work to become less metaphorical and more explicitly concerned with a speculative realism. The work of Douglas in analysed in the later chapter “Montage Politics”. Each of these artists, using distinct architectures, entice the user with variously intuitive interfaces and present them with enough material as well as enough space to begin to construct meaning for themselves.

As Barthes put it in Critical Essays:

To create meaning is very easy, our whole mass culture elaborates meaning all day long; to suspend meaning is already an infinitely more complicated enterprise - it is an art. (Barthes 1972: 272)

Such a suspension of meaning, or more precisely the suspension of the process of transforming meaning through composition, is an area of interest for the projects contained within this research. One of the focal points of the study therefore is the transfer of responsibility for image composition to users. In the works featured in this chapter, the transformative operation is often either largely poetic, conceptual or enacted at a particular scale.

Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions
**Image Transformation**

“If mechanical cinema is the art of transition, electronic cinema is the art of transformation. Film grammar is based on transitions between fully formed photographic objects called frames. It is done primarily through the collision of frames called the cut, but also through wipes and dissolves. In electronic cinema the frame is not an object but a time segment of a continuous signal. This makes possible a syntax based on transformation, not transition. Analogue image processing is one vehicle of this particular art …but it becomes even more significant in digital image synthesis, where the image is a database. One can begin to imagine a movie composed of thousands of scenes with no cuts, wipes or dissolves, each image metamorphosing into the next. A cut is a cut, but a transforming or metamorphosing operation is open-ended.” (Youngblood 2003: 157)

Youngblood goes on to speak of the “transforming or metamorphosing operation” in a rather literal sense, meaning the morphing of images in animations or visual effects. However, for the purposes of this research it is more productive to consider that all moving image material is constantly in a condition of transforming or metamorphosing in terms of it’s creation, reception, edits and re-iterations in different contexts. In the situation of the interactive moving image, what becomes necessary is the ability to identify, track and participate in this metamorphosis, attributing a field of continually updating contextual meta-data. Projects comprising this research attempt to do this in a variety of ways. For example, through contributing material, editing, compositing and writing onto moving and still images in the project *OM*, through shifting body position and in collaboration with other users controlling playback and audio layering in the project *Russell Square*, or through arranging the various elements of media in *dayfornight.tv*.

**The Artist as Design Scientist**

Our word "design" is composed of "de" and "sign," indicating that it means "to remove the symbol of." In this context "symbol" signifies ideas distinct from experiences. As design scientist the artist discovers and perfects language that corresponds more directly to experience; he develops hardware that embodies its own software as a conceptual tool for coping with reality. He separates the image from its official symbolic meaning and reveals its hidden potential, its process, its actual reality, the experience of the thing. (A. N. Whitehead: "Process and existence pre-suppose each other.") The artist does not point out new facts so much as he creates a new language of conceptual design information with which we arrive at a new and more complete understanding of old facts, thus expanding our control over the interior and exterior environments. (Youngblood 1970: 71)
The way in which Youngblood [invoking Whitehead] frames the issue of perception as a design problem finds a contemporary equivalence in attempts to theorise the complex in design. Implicit in such tactics are a rejection of narrative’s tendency to compress complexity, and more broadly, any auteur like theory of creativity which privileges an artist or designer as author of a world to which the viewer submits. Echoing this in the present is speculative realist thinking summarized by Ray Brassier thus:

Curved space-time, the periodic table, natural selection: none of these are comprehensible in narrative terms. Galaxies, molecules, and organisms are not for anything. Try as we might, it becomes increasingly difficult to construct a rationally plausible narrative about the world that satisfies our psychological need for stories that unfold from beginning, through crisis, to ultimate resolution. (Brassier 2011:)

**Cage, Cunningham, Composites**

Many of the works referenced share strategy, if not compositional structures that draw the audience into the work as a consequence of such new architectures. Famously, the sound and movement elements in the dance theatre of Merce Cunningham do not cohere in the traditional sense. They were designed separately by Cunningham and collaborator John Cage, then brought together to create a new, previously unknowable combinatory outcome. In the example of How to Pass, Kick, Fall and Run (1965) this is exhilarating to experience.

Other pieces described here such as the Cunningham, Rauschenberg and Paik’s I have experienced in the first person. This is particularly important with this type of work because it is highly experiential, exposing its audience to the production of affect as a design process in a very direct way. These works privilege doing / being over representation, as such it is difficult to do them justice by description. All have exerted a powerful influence on various aspects of the practice aspects of this study.
Merce Cunningham’s desire to have dance, music and design co-exist as separate partners in his work means that it is not unusual for one element to elbow out the others during performance. The dancers in … How to Pass, Kick, Fall and Run (1965) thus seemed unfazed by the degree to which the audience were focused on the work’s accompanying "score" - a string of stories written by John Cage - rather than their own energetic performances.

The main competitor for our attention was Cunningham himself … he narrated the stories from the side of the stage with immaculate, deadpan drollery. But almost as distracting was the wit of the texts. (Mackrell 2002)

Baldessari the intersection series 2002

John Baldesari

The montage aesthetic of Baldessari, both in terms of his film and print/photographic works has also been studied. The use of juxtaposition, layering and formal graphic properties are echoed in the latter practice projects, such as OM, which combines moving and still images.

Baldessari separates out all of the constituent elements of film form that are usually taken in unconsciously and in combination, so that, for instance, the word "title" occupies the position in the film where the title goes. What appears natural in one's everyday viewing becomes strange when pulled apart and recombined. (Eklund 2009: 84)

Baldessari’s Godardian approach to exposing such formal expectations within moving image presentations was also influential upon the practice projects in this study. He uses such an approach across work in multiple types; the alignment and misalignment of images, rhythm and foregrounding of typographic elements from the films is echoed in the formal quality of his printed works. Salle describes the “extreme discontinuity … and … elevation of montage” found in Godard to have been a profound influence on Baldessari. [Salle 2009: 146]
The work of English film-maker John Smith was also important to this research, and can be linked to the discussion of Baldessari in terms of the playful exposition of the ideological qualities of the medium and reflexive interrogation of its operation. Smith’s film *The Girl Chewing Gum* is discussed in the latter section *Montage politics*.

**Nam June Paik**

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Paik, Zen for film 1964. [Seen at Tate Liverpool 2010]

This work consists of a roll of 16mm clear leader that increasingly accumulates scratches and dust with each successive projection. These markings on the film emulsion become automatically part of the next presentation, making each viewing of Zen for Film unique. At the same time, the film will never show more than what is literally present in the room. Zen for Film suggests that performative film abolishes the purely reproductive function of film by activating the spectator as a participant and drawing attention to the actual context of the film screening. (de Bruyn 2004:154)

The Paik retrospective focused the research in a particular way in terms of the nostalgia in the title of this chapter. In Liverpool in 2010, Zen for film was exhibited as video, thus eliminating the accumulation of dust and celluloid damage described here by de Bruyn.

If the rhetoric of ‘Zen For Film’ is representative of a tendency, if not movement within the period described here; the attempted dematerialization of art?, this change in technology might be read as a metaphor for the broad failure of that project in both cultural and political terms.

A poetic of process, imbued with multiple layers of meaning; e.g. the politics of spectatorship and the decay of representational models, is flattened in the digital, becoming an ersatz version of itself, which cannot embody these critiques. Perhaps a new poetic is required for a medium that does not accumulate these kinds of artifacts, and is not changing or decaying in the same manner.
The removal of the mechanical projector and clear celluloid changes zen for film's meaning in ways probably not intended by the artist. The work no longer relates to the absence of a narrative and its replacement by process, or duration. There is no frisson of disruption for digital natives in the act of stepping in front of a digital projector casting white light. This is something experienced today in multiple everyday contexts, arguably now devoid of the meaning intended by Paik.

More successful in today’s context is Paik’s “1 Candle” [1998 – 2000]. The candle piece is a perceptual game achieved with multiple projectors, each only using one of their 3 RGB bulbs and arranged so as not to cohere, but to reveal an imperfect composite, a relayed live image that causes the viewer to question the representational model that they are seeing deconstructed in real time alongside the burning candle itself. Air turbulence in the gallery causes the flame to move and flicker.

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Paik, 1 Candle 1988–2000. [See at Tate Liverpool 2010]

The decomposion of the composite reveals to us two types of multiplicity. One is represented by space: It is a multiplicity of exteriority, of simultaneity, of juxtaposition, of order, of quantitative differentiation, of difference in degree; it is a numerical multiplicity, discontinuous and actual. The other type of multiplicity appears in pure duration: It is an internal multiplicity of succession, of fusion, of organization, of heterogeneity, of qualitative discrimination, or of difference in kind; it is a virtual and continuous multiplicity that cannot be reduced to numbers. (Deleuze 1988: 38)

The real time decomposition present in 1 Candle persists in a contemporary viewing of this piece. Unlike zen for film, it can be read in the context of a revelation of multiplicity such as described here by Deleuze. The misaligned single colours of the projectors fail to come together convincingly to represent a single composite reality; rather the total image projected is multiple, unstable, consisting
of simultaneous and continually differentiated form, colour and scale.

**Mixed, Multi & Hyper-Media**

The practice projects included in this research are a long-term development of work that began as an undergraduate student. Twenty years ago, in the early 1990’s there was perhaps a comparable sense of new possibilities for the marriage of art and technology as during the period described earlier by Shanken. This time, the debate was framed in terms of the affordances of digital media. Myself and fellow students were working on experimental multimedia interfaces that speculated on the nature of this new medium. In the same year that I graduated from my first degree and published the CD-Rom “Digitivity” [New talent pavilion, MILLIA festival of new media, Cannes 1996] the critical media group “Anti-Rom” from Westminster University in London published the following founding statement:

Anti-rom was intended as a critique of the poverty of contemporary multimedia. In particular it was intended as a critique of those CD-ROMs which fail to go beyond traditional linear form - the kind of CD-ROM where shiny 3D buttons are grafted over packets of pointless information - the automatic vending machine type of CD-ROM where you can press a button and have whatever you want, as long as its Coke or Fanta (and there's no Fanta). We asked ourselves whether this poverty was an intrinsic aspect of interactive media per se - or whether it was caused by a poverty of imagination thus far on the part of interactive producers ... We found ourselves operating within a profoundly non-linear paradigm, a paradigm of ambient interactivity, ritual activities, and of representations which were circular, repetitive, without syntax and without closure. It was hard not to think like a modernist. It was hard not to find an "essence" of non-linearity, a truth of interactive. We found it was almost always easier and more successful to make things which were playful, rather than purposeful, things which were open-ended rather than closed-off. (Polaine et al, 1995)

The critique offered here by Anti-Rom was shared wholeheartedly by myself and the collaborators with whom I was working at the time. Many of the issues we were concerned with matured into the research in this project. Although some of the rudimental experimental multimedia of the 1990’s, such as BlindRom, AntiRom and Digitivity have been long surpassed in their technical sophistication by contemporary media practices, the beginning of new technologies is often a period of inquiry and experimentation where the most critical questions are being asked.
This debate around the extent of viewer/user agency, and the need for the design of increasingly open ended media architectures to overcome narrative closure, can be read as a re-staging of those taking place in the 1960’s and 70’s Art and Technology period. More urgently perhaps, in the early 1990’s, rather than an art discourse taking place in privileged cultural spaces, the parameters of an industrially defined multimedia were seen to be rapidly assembling formations of types, standards and computational environments that would come to structurally determine users relationships with information and with one another. The consequences of this kind of language building taking place via the adoption of arguably inappropriate design thinking (narrative and immersive technologies) would be felt both in the redundancy of of some of these models, and the profound anxiety associated with the emerging, now dominant interactive social media of the near future.

In this chapter, Paik’s *zen for film* was analysed critically relative to the contemporary world. The piece shared structural similarities with a practice project of my own, Russell Square, which is reflected on in detail in a latter chapter. In that project, the spectator must also step in front of the projector[s] to cast their shadow on the screen. However, they cannot perceive the singularity of their shadow alone, as a pure form in blank space. Rather, their shadow is composites into a world they cannot effect, only further disturb. In the world of Russell Square, made at the height of the ‘war on terror’ and specifically the days after the bombing of the London Underground, there is no possible exit from representation, or ultimate agency for the spectator. There is merely a frustrating or perhaps even satisfying, depending on your point of view, sense of entanglement in a mesh far beyond our comprehension, let alone control.

Perhaps this is indicative of the way in which the research project has been informed by the aesthetics and tactics of the precursors that have been discussed in this chapter. I have asserted that something of the open ended quality of montage present in the experimental theatre and art of this period is lost in the digital. At the same time, I have not sought to resurrect, or use these works out
of pure nostalgia, but out of a sense that their architectures may suggest useful models for adaptation in the context of contemporary interaction design.
This project was the beginning of a series of video works investigating the use of live editing and compositing. It has been through several iterations since the original installation and live performance at the Auto Festival. The project features four variable video sources that are combined in real time into a single composite image controlled by a randomizing computer algorithm. The selection of material is controllable to a greater or lesser degree by the player who sets up the system. A later iteration of this project uses as its source material documentary footage of a script read-through. The ‘read through’ represents an interesting threshold state in the creation of traditional drama; a mid-point between the written text on the page, and its eventual embodiment in full performance. I was interested in the fragility and malleability of ‘content’ in this form, both in terms of what is being done with the text and the behaviour of the actors; what performers can and cannot do during a read through. There are obvious similarities with a radio play, however the process of rehearsal itself is the focus of the video. Through continual reiteration and contextual reinterpretation, the recursive modulation and adjustment of a fixed text is revealed. In this version, the algorithmically controlled editing serves to short circuit any linear narrative experience for the viewer, in spite of the actors attempts.
The DVD section for this project also includes a secondary piece created using the same algorithmic architecture as “Read-through”. In this study, the source footage being appropriated is excerpted from a documentary film with the subject of a cycling road race. The algorithmic cutting and compositing is used as a counterpoint to the aesthetic of the original film. In the film A Sunday in Hell [Jorgen Leth 1976] the use of voice over, sync sound and music combine in a mix of expository and poetic documentary modes. The algorithmic cutting and displacing of the imagery, causing sections to repeat jarringly, moving in and out of phase with one another both audibly and visually, introduces a new deconstructive poetic. At the time of making, these variations on the project were created as experiments; a way of testing the resultant effects of recombinant and or randomizing algorithms as applied to various types of archive material. Although formally interesting, the algorithmic approach to language building was abandoned after Read-through and www.dayfornight.tv. The research from here on in demanded that the user be afforded greater agency in co-authorship, rather than surrendering to the ambient media experience offered by these projects.
Shoot/Get Treasure/Repeat. Screen design for performance. 2009

For the project ‘Shoot/Get Treasure/Repeat’, for Moving Being theatre company, the performance space is envisaged as a composite image field. This field is delineated by projection screens that can be configured in several combinations to produce real-time composites of pre-recorded processed video, live performance and typographic / motion graphic elements. The screens move on horizontal and vertical axes; compressing and extending the performance space as required and simultaneously resolving / dissolving the image. The quality of montage produced is fragile and incomplete. Some elements of typography have been pre-rendered in layers so that from the audience point of view they will appear to logically seek to be placed together in a ‘complete’ composite, yet they never fully achieve this resolution; remaining to a degree elliptical. The intention is that the viewer’s attention is drawn to the process of montage as scenic construction taking place.

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John Cage - Not Wanting To Say Anything About Marcel II, 1969

The movement [such as it is] within the video sequences is extremely slow, sometimes to the point of being difficult to perceive. More apparent are the changes in typography; in effect having the appearance of edits. Indeed these are the element that persuades the viewer they are witnessing something durational rather than static. The sequences were designed to share a co-presence with live action, sound and dialogue. Thus it was not desirable for the video imagery to be highly kinetic in the sense of being distracting or dominant. Rather, the layers were designed to be perceived as a complex ‘bundle of separate elements’ of Brecht’s description of the integrated work of art.
This performance of Mark Ravenhill’s work was comprised of several apparently free standing scenes not explicitly relating to one another [each actually written as a short play within a cycle]. The screen design and in particular the typography performed an important bookending function, as well as creating a formal unity across disparate narrative elements. The typography builds [over an approximate duration of 5 – 10 mins in most instances] to title, delineate and constrain each play within the play.

During the process of designing this project I was again drawn to an interview with John Cage where he discusses issues of affect and attention focus in terms of stage design.

Kirby: You said once, "I try to get it so that people realize that they themselves are doing their experience and that it’s not being done to them." Isn't all art done to you?

Cage: It has been, but I think we're changing that. When you have the proscenium stage and the audience arranged in such a way that they all look in the same direction - even though those on the extreme right and left are said to be in "bad seats" and those in the center are in "good seats" - the assumption is that people will see it if they all look in one direction. But our experience nowadays is not so focused at one point. We live in, and are more and more aware of living in, the space around us. Current developments in theatre are changing architecture from the Renaissance notion to something else which relates to our lives. More pertinent to our daily experience is a theatre in which we ourselves are in the round, in which the activity takes place around us. (Cage 1965: 51)
Composite frames
The performers are visible to the audience both during and between scenes as actors in the construction of a depth model. If they are not inside the delineated performance space they sit outside the screens, still visible to the audience. Some double as video operators & scene shifters. In such a model there is no offstage. As the semi transparent screens are moved the audience’s attention is drawn to the actors dual role as both performer and stage hand. The arbitrariness / difference in these states of being is also highlighted. The intention is for a technologically augmented alienation effect of sorts, making the audience complicit in the staging of a reality experiment designed to harmonise with the themes of Ravenhill’s texts.
Shoot/Get Treasure/Repeat context:

Shoot/Get Treasure/Repeat is a series of short plays by the acclaimed British playwright Mark Ravenhill (b. 1966). The entire cycle investigates the effects of war, be it in Iraq, Afghanistan, or other regions of the Middle-East, on our domestic everyday life. Ravenhill also examines the West’s urge to export its trademark goods of “freedom and democracy;” while at home, “we live in gated communities” and “withdraw into more and more fearfully isolated groups”. Each play takes its title from a classic epic such as Paradise Lost and The Odyssey. The collection consists of sixteen short plays of twenty minutes each. Altogether the plays would make a six-hour marathon if performed one after the other. (Laera 2009: 3)
Architectures of Participation

Practice research project “www.dayfornight.tv”
System Architecture - Dan Graham

Being a player - Toshio Iwai

Participation Fetishism – Rafael Lozano Hemmer

Device Control - Tacita Dean
This chapter is focused on the development of participatory models arising from the affordances of the digital. The projects featured date from the 1980’s to the present. The various practices suggest the need for greater creative involvement on the part of the user, sometimes in symbolic terms in interactive works of art, at a psychological level, or in other examples through multi player games. The question of agency is explored by contrasting aesthetically rich media which is algorithmically controlled [or based on pattern generation abstracted from live data] with works that are more basic in visual & sonic terms, yet give the user a greater degree of control. Brenda Laurel suggests that types of interactive experiences can be classified in the following way;

Interactivity exists on a continuum that could be characterized by three variables: frequency (how often you could interact), range (how many choices are available), and significance (how much the choices really affected matters) (Laurel 1991: 20)

In the case of the practice project accompanying this chapter, the design of the web space dayfornight.tv can be critiqued as offering quite limited possibilities in terms of user feedback into the system itself. However, the user was able to adjust the hierarchies of material within the database and the way in which it was displayed within the screen space. Designed in response to the somewhat stillborn concept of interactive TV, dayfornight.tv explored possibilities for user composition of mixed media material within a large HDTV screen space, mimicking the moveable component windows of operating systems rather than the schedules & menu’s of broadcast media.

In 1988 Ascott was speculating on the effect real time networking might have on image composition in the below editorial for Leonardo;

Telematic interactivity is likely to lead to a heightening of the process of individuation in our society. But it is not simply the process of interactivity which is important here; it is the mediation of such processes by the computer which suggests a paradigmatic change in the nature of art ... 'inputs' from a variety of sources can be retrieved at whatever moment or in whatever context a collaborator may choose-to be acted upon, modified, played with, deconstructed, inverted, twisted, stretched and eventually re-circulated throughout the network according to each individual desire. Separate realities can be woven into new cultural tissues. (Ascott 1988: 231)
Around a decade later Plant omits specific reference to the condition of the moving image in her summary of the techno culture circa 1997, yet it adequately represents the landscape from which the design thinking of this research arose, as it was around this time that the redundancy of the moving image as currently configured within interactive media became an area of interest.

At the end of the twentieth century, all notions of artistic genius, authorial authority, originality, and creativity become matters of software engineering. Beats extract themselves from melody; narrative collapses into the cycles and circuits of nonlinear text; processed words, sampled music, and digital images repeat the patterns of interlacing threads, the rhythms and speeds of gathering intelligence. Retrospectively, from behind the backlit screens, it suddenly seems that even the images most treasured for their god-given genius were themselves matters of careful composition and technical skill. (Plant 1997: 194)

The types of visibility, representation and architectures of participation afforded by web2, the personalisation of online media and in particular so-called social media are today highly contested. Douglas Rushkoff speaks persuasively of the need to maintain the critical position of a developer in an environment where users are increasingly drawn to corporate media data spaces. This makes problematic the assertion that new technologies will afford greater opportunity for individuation, indeed Rushkoff argues that the reverse may be the case;

Finally, we have the tools to program. Yet we are content to seize only the capability of the last great media renaissance, that of writing. We feel proud to build a web page or finish our profile on a social networking site, as if this means we are now full-fledged participants in the cyber era. We remain unaware of the biases of the programs in which we are participating, as well as the ways they circumscribe our newfound authorship within their predetermined agendas. Yes, it is a leap forward, at least in the sense that we are now capable of some active participation, but we may as well be sending text messages to the producers of a TV talent show, telling them which of their ten contestants we think sings the best. Such are the limits of our interactivity when the ways in which we are allowed to interact have been programmed for us in advance. (Rushkoff 2010: 140)

If arguably the initial promise of network culture and its relationship with the moving image in particular has yet to be realized, for the purposes of this research there are several practices that can inform the continual attempt to imagine its potential form.
System Architecture - Dan Graham

One such project is Dan Graham’s “Buildings and Signs”, an example of the conceptual modeling of the relationship between viewer and participant in which these 2 positions are modulated by the architecture that interestingly precedes the present situation vis-à-vis participatory media.

“In this cinema, unlike the cinema which must conceal from the spectators their own looks and projections, the architecture allows inside and outside spectators to perceive their positions, projections, bodies and identifications. Topologically, an optical skin, both reflective and transparent inside and outside, functions simultaneously as a screen for the film’s projection. Dialectically it is seen in the outside environment as well as in the normal cinema context as a point of transfer for the gazes of the inner and outer spectators, in relation to each other and the film image.” (Dan Graham 2003: 150)

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Dan Graham, Buildings and Signs University of Chicago 1981

In this project the site of images is imagined as a “point of transfer for the gazes of the inner and outer spectators, in relation to each other and the film image.” This indicates that Graham identifies the image as not a fixed, singular finality, but rather a medium through which interpretations may flow.

In my cinema project it is the screen instead of the machine, and the system of voyeuristic identifications, which is exposed. It is assumed that the cinema is prototypical of all other perspective systems, which work to produce a social subject through manipulating the subjects imaginary identifications. In the cinema all looks are two-way and inter-subjective for it is difficult to separate the optics of the materials of the architecture from the psychological identifications constructed by the film images. The psychological circuit of intersubjective looks and identifications is echoed in and is a product of the material properties of the architectural materials, whose optical functioning derives from the properties of the two-way mirror glass. (Dan Graham 2001: 200)

A significant aspect of this design project in the context of collaborative creativity and the design challenges for participatory interactive media is that in an architecture such as the one established here by Graham, participants are visible to one another. This clearly posits a future cinema not as
one where we sit in a darkened room, anonymous, in a situation of surrender to what appears on the screen. Indeed Graham’s proposal implies an ‘audience’ that is critically engaged with one another, through, and framed by the situation of the architecture or system. This audience becomes visible, vulnerable, and responsible to one another.

In much interactive art, particularly net art and within online culture in general, this is often far from the case. A key issue in the critique of many open-ended networks is the potential lack of responsibility and visibility of authors. This can take the form of internet trolling, where users seek to intentionally disrupt an apparently constructive system or debate. For example, in a wiki it is possible for any user to alter content freely and anonymously, at which point the utopian notion of distributed authorship can come down to earth with a bump. In the development of these systems there is much debate around issues of responsibility as well as privacy. How can the form of such systems be allowed to freely evolve whilst retaining integrity and usability. What happens to notions of design coherence when designers lose control of the work, willingly or otherwise? Behavioural constraints that define the parameters for interaction as well as frame the debate through the production of seed artifacts are techniques that were used in several of the pieces within this research project, such as dayfornight.tv, Russell Square and O.M.

**Being a player - Toshio Iwai**

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Toshio Iwai Composition on the table 1999

An example of an artist who is dealing with these issues through the gamification of interactive art is Toshio Iwai. In abstracted game-like scenario’s such as those designed by Iwai, the user is relatively
constrained by a system that is basic yet highly compositional. Collaborative instruments of sorts, designed as multi player experiences and described by Coulter-Smith as “creativity games that involve the viewer in a creative process.” Coulter-Smith contrasts Iwai’s practice with the dominant form of media or installation art which he characterises as “the artists game”. The artists game, according to Coulter-Smith largely consists of maintaining a privileged discourse and set of artefacts, however transient in nature, which generate cultural capital for their informed audience.

Iwai’s work is more concerned with the viewer doing than ‘reading’. Which is to say his work is more embodied, a goal that fine art aspires to but seldom achieves ... Iwai’s art is highly accessible. Indeed he has created a collection of his visual music games for the Japanese gaming company Nintendo (Electroplankton for the handheld DS game machine) and has recently invented a new digital musical instrument the Tenori-On, marketed by Yamaha. Whereas fine art is limited to pre-industrial, pre-mass modes of production, media art is not. Where fine art is the preserve of wealthy collectors, products such as Electroplankton and Tenori-On are available on the mass market. One could pose the question as to whether Iwai’s art entails a dumbing down of art? If we compare his work with Carsten Höller’s slide installation, Test Site, exhibited as fine art in the Turbine Hall of Tate Modern in 2006 then we have to answer no. It is time that Iwai was recognised in the fine art world because his accessible interactive installations attain the goals outlined by Bourriaud in Relational Aesthetics (2002) to a significantly greater extent than the artists dealt with in that book. (Coulter-Smith 2006)

Participation Fetishism - Rafael Lozano-Hemmer

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Rafael Lozano-Hemmer Body Movies, Arts Development Council, Hong Kong 2006

Body Movies transforms public space with interactive projections. Thousands of photographic portraits, previously taken on the streets of the host city, are shown using robotically controlled projectors. However the portraits only appear inside the projected shadows of the passers-by, whose silhouettes can measure between two and twenty-five meters, depending on how close or far away they are from the powerful light sources positioned on the ground. A video surveillance tracking system triggers new portraits when all the existing ones have been revealed, inviting the public to occupy new narratives of representation. Body Movies attempts to misuse technologies of the spectacular so they can evoke a sense of intimacy and complicity instead of provoking distance, euphoria, catharsis, obedience or awe. (Lozano-Hemmer 2007: 75)
The rhetoric around participation perhaps risks obscuring the seriousness of some of the work in this field. A kind of lowest common denominator participation fetishism, extending to crowd sourcing as a type of marketing and user generated content in television advertising, or viewers being asked to tweet the news has become prevalent.

The marketing of Rafael Lozano-Hemmer’s Manchester Art gallery exhibition “Recorders” [2010] made use of the phrase “awaiting your input” on posters and flyers around the city. But was this show really needing our input, or more specifically, at what level was our input needed? As a user, it was frustrating to feel that the register at which the work was actually requiring user interaction was quite low, and that a more significant determining force, underpinning why the show was happening at all were its seemingly benign politics of inclusion and access.

During the show, which had several installations in different rooms, each piece was accompanied by a museum attendant to explain what the piece was about and how to interact with it. As a visitor, I was left with the sensation that a kind of forced participation was going on [for some] resulting in the generation of pleasant patterns and a superficial frisson of electronic connection.

Another piece projected the word autopoesis onto the users forehead while they were looking in a mirror. Other than the biological metaphors of Maturana and Varela being very fashionable in interactive art, what did this actually mean? As suggested by Beer in Artificial Life, there is much use and abuse of the term autopoesis:

Unfortunately, while the basic idea of autopoiesis seems clear enough, there is considerable subtlety and controversy in the details, and the debates are often carried out in somewhat obscure and idiosyncratic language. What exactly does it mean for the components to generate the network of processes that produced them? Studying simple concrete models can be an excellent way to sharpen our thinking about difficult concepts. For autopoiesis, several cellular automata models have been developed. Unfortunately, such models have not moved beyond the stage of demonstrating that computational models of autopoiesis are possible. To my knowledge, none of these models have been analyzed in any depth, nor have they been used to explore any of the key ideas and consequences of Maturana and Varela’s framework. (Beer 2004: 310)
Lozano Hemmer has a status as perhaps the first international art star of this kind of participatory interactive media, wherein the user makes or is the work. I refer to his practice, or his prevalence, not to be overly critical of it, rather because it seems to highlight a persistent problem in participatory work. Works with an extremely open architecture and little in the way of traditional content, through the skills of their designers can be powerfully interactive and performative e.g. Hemmer’s body movies, and well known relational architecture projects pulse park and vectorial elevation. However, much of the success of these art stars, one could also include Carsten Holler or Jeremy Deller here, seems to rest on the perceived neutrality and celebratory quality of the experiences they offer to users.

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Carsten Holler Double Carousel 2011

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Jeremy Deller Sacrilege 2012

Whilst Hemmer’s work speaks of “transforming public space” and opposing public “obedience” it is promoted as a public artwork in China, indeed many of his projects are continually staged and restaged for major public festivals and civic anniversaries in countries all over the world. Might this kind of surface model of participation, offered by Hemmer and others be so successful due to its being perceived as profoundly unthreatening?
As mass media encroaches on virtually every aspect of personal and social life, participation now seems no more complicated than owning-or having access to a modem equipped computer. Whereas post - World War II existential angst derived largely from the psychic inability of many to participate in what seemed a murderous society, today there exist no psychological barriers to social participation. The paralysis is of existential man has evolved into the highly individuated indifference, or channeled automatism, of postmodern human.

A recent and deceptively simple gesture by Muntadas - a text work reading Warning: Perception Requires Involvement, translated into more than a half-dozen languages - suggests a paradoxically sincere and ironic answer to the ever-present question of how the individual might participate in art or society. The artist implies that there is plenty for viewers to see and learn, but that something is demanded of them as well: they must engage critically. How else to struggle against the ideologically predigested perspectives of mass media and institutions? How else to keep alive the possibility of agency-of acting rather than being acted upon - in the face of all encompassing postmodern culture? (Atkins 2008: 64)

Atkins is correct to pinpoint the agency of acting as the critical component which seems absent in much of so called participatory culture. In the context of an interactive moving image media, this can be actuated by the user taking on something of the role of a maker, editor or compositer, and it is these types of agency that the overall design project became more explicitly interested in from this point onwards. This chapter has cited examples of compositing operations achieved in various ways e.g. by Graham and Hemmer. These works use the bodies of their participants within an architecture of pavilions or projections in public spaces to create a fairground spectacle of sorts that can be observed & modulated by its participants. The work of Iwai uses gaming to engage its players in a more direct creative agency of sonic composition, but one which is aesthetically controlled by the game designer.

Device Control

As opposed to these tactics, in my projects the direct manipulation of media objects became an important component of the practice research from here on. Not as metaphor but in a way that the user will transparently relate to home media tools or software environments. This is both a simplification in terms of functionality and also a clarification of the purpose of the pieces which are designed as tools as much as they are artworks?
Through the design as research I have been attempting to develop less totalizing types of interactive media experiences. One such strategy would begin with stripping out the “multi” of multimedia and considering the constituent parts of communication being created as discrete entities, then combining them.

The jukebox installation by Tacita Dean was influential in the development of these projects. Actions required on the part of the user were very obvious; linked to a collective memory of the machine and in this case the manner operation of large, tangible dials and buttons. The outcomes were as clearly deterministic, but no less interesting for it. Although Newman suggests that in this piece we are incapable of agency, the basic process of browsing through archival material and choosing the location and time of the sounds we wish to hear created a powerful sense of agency, for me precisely because of the tangible feedback I was getting; the outcome was not shrouded in audio visual layers of complexity where it was unclear what I was responsible for activating and what, in the words of Cage, was simply being done to me by the system. The jukebox is a mechanism which users can see working in front of them, so having your choices manifested and waiting to hear the result of them alongside other visitors in the space is part of what makes the experience of interacting with the system satisfying. During the research process this work was a useful reminder that legibility and feedback were imperatives to strive for alongside the tendency for the work to develop a more visually complex and layered quality.

‘Jukebox 1’ … is comprised of one large console, three CD changing mechanisms, four speakers and 192 CDs housing a collection of ambient sound collected from eight coastal cities around the world. Recorded during one 24-hour period, Jukebox 1 illustrates not only the artist’s fascination with sound, but also its potential for stirring the imagination of its listeners. This is a participatory work; the visitor may chose a location and an hour in order to imaginatively recreate a day in the life of Ajute Mill in Dhaka, Bangladesh, Dixie D’s Snack Bar in Hoonah, Alaska. Memory, duration, and curiosity all contribute to the power of this work. Just as in the days of radio, what we can’t see is often more suggestive than what we can. (Carabell 2001)
The consoles are evocative of science fiction space-ship controls, suggesting a past vision of the future. These works exploit the immediacy of sound - the recorded sound is the same sound of which it is the recording, unlike a visual representation of a scene - but they do so not to abolish distance but to intensify it. Hearing the sounds, we are all the more aware that we are not in situ: the cost for us of having all the sounds available simultaneously to select and play, to consume at will, is a radical dislocation and disembodiment. We are at once supremely powerful and utterly incapable of agency, except the meaningless act of pressing a button. (Newman 2003)
This was the first in the series of practice research projects undertaken. The project is a multi-authored web space consisting of image/sound/text elements existing in a free-floating palette-style interface. This suggests that the files in the database; be they still or moving-image sequences, sound pieces or texts, exist independently of one another without a conventionally hierarchical user interface of indexes or menus. The user, by extracting items from the symbolic database, begins to construct relationships between distinctly separate objects in the ‘blank’ space of the desktop. The user is able to control the extent to which separate media types such as sound and images smear one another, creating a new recombinant montage according to the actions of individual users. The contributors to this project are an international network of image-makers, musicians and authors.

Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions
The project emerged from a long-term interest in the quality of montage that might be afforded by screen based interactive environments. Prior projects such as Digitivity cd-rom, 1995 [co designed and edited with Mark Edwards during the BA Interactive Arts] had experimented with the aesthetics and architecture of hypermedia systems. MA graduation project Component Artworks 1997 extended this collaboration into a gallery based multi screen system of discrete software artworks.

At the time this project was designed, the development tools for designing online spaces were going through a period of evolution. The aesthetic of macromedia’s flash had been dominating web design, being the first tool to allow smooth full screen animation through its use of vector graphics. This led to web sites becoming rather televisional in nature, with decorative and animated elements and sounds competing for users attention. A style of web media had arrived that would allow games to be incorporated with marketing in so called ‘rich media’ interfaces that [as vectors] could be scaled up without loss of quality or performance. Where a few years earlier web media was dominated by
text with necessarily small images let alone video, flash allowed designers access to the the whole of the computer screen with which to create persuasive content. Setting itself against this tendency in web design, the project attempted to give greater compositional control to the user so that they would be responsible for the arrangement of components on the [blank] screen.

In the context of the larger research project this piece was important, as it was the first attempt at articulating through a design process the question of defining a kind of medium specificity for the combinatory use of the moving image alongside other media in interactive systems. This may appear paradoxical, in terms of the need to define such specificity at all in the context of new media art, let alone to do so in a combinatory way using the moving image alongside graphics / sound / text in an assemblage form.

However, it was precisely new media’s tendency to imitate prior forms of media, and the media design trend towards the remediation of television on the web that the project was established to critique. Its aesthetic perhaps recalls Warburg, Twombly and Rauschenberg. The agency afforded the user, in terms of their responsibility for organising the screen space, choosing and manipulating the material in the palettes or floating windows, recalls an operating system. The desired tension between the relative openness afforded by operating systems and the reading of content was thus explored.
Critical Design

&

Practice research project “Digital Media Curriculum Design”
User Generated Content

Component Interactions & Utopian Operating Systems

Defining the Language of New Media

Critiques of network culture

In the Social Factory

Physical Computing
Working towards a synthesis of sometimes contradictory design approaches and theories, in this chapter some characteristics of the proposed interactive systems constituting the practice are considered. This aspect of the project also concerns some historical examples of utopian ideas in the area of operating system and communication design.

In contemporary design culture there is much discussion around design thinking, and how this can be applied to problem solving in society at large. The ideology of this is critiqued in this section, both in terms of the creative industries reliance on a precariat of cultural workers and the widespread adoption of social media networks.

Next to a McLuhanesque variant that expressed itself in models of 'artificial reality' (and found its sequel in the 1990s with artificial life installations) there developed a floating work of art that does not indulge in cybernetic fantasies of omnipotence and connection to the machine, but instead designs models in which traditional orders are being restructured. The floating work of art conceives of the digital medium, not as an extension of the human sensory organs, but as an aesthetic space, which allows forth reconstruction of a changed world order. (Dinkla 2002: 34)

Dinkla's floating work of art is a useful working definition allowing artists and designers to develop models that remediate aspects of existing media, or recombine them whilst designing speculatively.

The usability imperative in interaction design is strong, yet open ended experimentation incorporating rapid prototyping and iterative testing is key to eventually meaningful user experiences. As Lanier states:

any gadget ... gets boring after a while. But a deepening of meaning is the most intense potential kind of adventure available to us. (Lanier 2010: 192)
User Generated Content

The YouTube website had as its slogan “broadcast yourself”, and beneath the existing video clip a message thread at the foot of the screen also suggests that users may wish to “respond to this video with a video of your own” This statement accurately reflects a change in regard to the relationship between interaction design and the moving image in recent years. When this research began it was framed as an investigation into the potential of interactive television; I was designing a speculative form somewhat distinct from the computational space, yet drawing on aspects of it, and of radical cinema. In the elapsed time it has become redundant to differentiate between the computational and televisual space in respect of the consumption of moving image media.

The downloading of film and TV content, television channels migrating to browser based players, movies streamed on demand to computers and games consoles have all become commonplace and completed a long expected convergence. In such a situation, the design and ownership of the still emergent technologies and platforms across which this material is being shared is key, for it is this combined technology and software superstructure that will give these behaviours their form.

The multi-billion dollar scramble for intellectual property and established communities of users on the web (Google/YouTube/Facebook/Twitter) was described by Henry Jenkins as a digital land grab, and this aspect of the field deals with issues emerging from the appearance of widespread video blogging, as well as other forms of “me media” (an early term used to describe user generated content) and particularly the developing research concerning the need for contextual meta data and user annotation.

Linked to this are the phenomena of social bookmarking as coined by the system delicious @ http://del.icio.us whereby users share links to material on the web. These scenes are examples of flocking behaviour in networks, where users coalesce around material of shared interest and
distribute, attribute and annotate it in a public space.

“A vog is not streaming video (this is not the reinvention of television). A vog uses performatve video and/or audio. A vog is personal. A vog uses available technology. A vog experiments with writerly video and audio. A vog lies between writing and the televisual. A vog explores the proximate distance of words and moving media. A vog is dziga vertov with a mac and a modem.” (Miles 2005)

In a distributed authorship system (eg a Wikki) and particularly in a Video blog there is an ongoing problem with regards to the moving image. The video sequence in this ‘clip culture’ as currently imagined cannot be changed. The text in a Wikki is continuously unstable and in a permanent state of becoming. By contrast the video clips on YouTube or other such sites can only be referred to by attendant comments – the comments however do not feedback into the image system - they remain outside it. In a 2011 Die Zeit interview with Katja Nicodemus the film maker Jean Luc Godard states;

“There’s already a cultural critique of capitalism, but it usually remains text, literature, writing. You put one sentence after another but no vision emerges from it. A cultural critique must also include a critique by way of images.”

Although this interview was conducted long after the research began, it succinctly summarises Godard’s project, and mirrors the practical element of the research I have been undertaking through the various design projects. The description by Miles also naturalises the idea of the network itself.

Such a naïve approach to networks of communication is critiqued by Hardt and Negri in Empire.

One site where we should locate the biopolitical production of order is in the immaterial nexuses of the production of language, communication, and the symbolic that are developed by the communications industries. The development of communications networks has an organic relationship to the emergence of the new world order - it is, in other words, effect and cause, product and producer. Communication not only expresses but also organizes the movement of globalization. It organizes the movement by multiplying and structuring interconnections through networks. It expresses the movement and controls the sense and direction of the imaginary that runs throughout these communicative connections. (Hardt and Negri 2000: 32)
Component Interactions and Utopian Operating Systems

How might like-minded communication designers deal with issues of complicity [in the language of Hardt / Negri] as developers and users of such systems? Many interactive artists and designers have developed critical media projects incorporating counter hegemonic strategies that pre-date this text. An example of this kind of work in the UK is the Web Stalker made in 1997 by design group 1/0/D.

“Technological innovation was class warfare” Mathew Fuller of 1/0/D

The Web Stalker was a software artwork designed as a critique of dominant web browsers such as Internet Explorer and Netscape Navigator. Rather than displaying the encoded images & texts on the screen as a conventional “web page”, the application displayed the html code behind the layout, revealing the method of construction and embedded linkages to other addresses on the internet. One window within the application visualised the potential connections between the page you were reading and its linked addresses, in an early example of rhizomic data mapping in real time. The designers wished to draw users attention to the ways in which accessing information was becoming limited by what Fuller called design instructions in the accompanying essay ‘A Means of Mutation’;

It is the technical opportunity of finding other ways of developing and using this stream of data that provides a starting point for 1/0/D 4: The Web Stalker. As all HTML is received by the computer as a stream of data, there is nothing to force adherence to the design instructions written into it. These instructions are only followed by a device obedient to them. (Greene 2004: 85)
Ted Nelson’s Xanadu

An earlier iteration of what we have come to know the world wide web, a prototypical hypertext, was proposed by Ted Nelson’s Xanadu project 1960 – 1998;

“In the Xanadu docuverse, an assertion could always be followed back to its original source. An idea would never become detached from its author. Public discussion on important issues would move forward logically, rather than merely swirling ineffectively through eddies of rhetoric. In fact, any reader could, by creating and following links, freeze the chaotic flow of knowledge and grasp the lines of connection and influence … Links to critical information would remain intact no matter how many times a passage was quoted. No form of communication in history had ever offered this possibility. In books, television, and radio, the truth is a slave to a good story, and convincing lies are remembered while dry, factual refutations are forgotten. In Xanadu, this problem is solved. Transclusion and freedom to link are crucial to social progress, the programmers argued, because otherwise, the constant mutation of a discussion "would destroy selection by leaving criticisms behind.” (Wolf 1995)

Reconciling the need for an evolutive system such as this to offer freedom to its users, indeed encourage them to develop works according to their own desires and perhaps away from the original intention of the designer, yet maintaining coherence and tracking changes or meanings to their original source has been a key area of interest for this research. In “The Fall”, Lebbeus Woods theorises such an architectural system;

A space is deemed ‘functional’ if it can be used in the way the designer prescribed and presumably, its client or anticipated users intended. But when, as is often the case today, the goal is to enable unpredictability, to give people a high degree of freedom in how and why they need or use designed space, it is no longer possible to think of function, or purpose, or meaning as we have before.

The architect is no longer the planner who determines the shape of space in advance, but one who sets up the limits—the rule structure of materials and how they are shaped—then steps back and lets collaborators do the work. Design as a determination in advance of what is to happen and how is brought together with design as a calculated risk, an acceptance of accidents within a set of declared limits. (Woods 2003: 155)

Defining the Language of New Media?

The challenge for interaction designers lies in the detail of how such a system theorized by Nelson or Woods can be achieved in practice, incorporating the moving image as a functional piece of software. In the language of new media Manovich states;
An image acquires the new role of an interface (for instance, imagemaps on the Web, or the image of a desktop as a whole in GUI). Thus, image becomes image-interface. In this role it functions as a portal into another world, like an icon in the Middle Ages or a mirror in modern literature and cinema. Rather than staying on its surface, we expect to go "into" the image ... the image can function as an interface because it can be "wired" to programming code; thus clicking on the image activates a computer program.

A computer image is frequently hyperlinked to other images, texts, and other media elements. Rather than being a self-enclosed entity, it points, leads to, and directs the user outside itself toward something else. A moving image may also include hyperlinks (for instance, in QuickTime format.) We can say that a hyperlinked image, and hypermedia in general, "externalizes" Pierce's idea of infinite semiosis and Derrida's concept of infinite deferral of meaning. (Manovich 2001: 290)

Manovich poetically suggests that images in new media container formats become interfaces, yet neglects to mention how we might design them to be in any meaningful way, dialogical. Digital photographs on a computer might also be considered to be just that, photographs rendered in a manner that digital natives have completely naturalised. It is an open question whether facilitating an infinite deferral of meaning as described here is ultimately desirable. It might be argued that such a post-modern deferral is precisely the state which new interactive media systems must be designed to transcend.

As opposed to the notion that new technologies must in the modernist sense develop their own media specific languages, industries such as design, advertising and broadcasting often view what they term digital, as merely a new means of distribution for existing products and services. Many of the practitioners referred to in this research project are inheritors of a Brechtian approach, opposed to the maintenance of what Manovich refers to as the reality effect;

While modernist avant-garde theater and film directors deliberately highlighted the machinery and conventions involved in producing and keeping the illusion in their works -for instance, having actors directly address the audience or pulling away the camera to show the crew and the set - the systematic "auto-deconstruction" performed by computer objects, applications, interfaces, and hardware does not seem to distract the user from giving in to the reality effect. [Manovich 2002 208]
This is perhaps a particular concern in light of the current tendency for the open ended creative possibilities of computing to be somewhat reduced as devices are reconfigured into media readers such as tablets and smartphones. Rather than tools with which users could make a range of media, systems or artifacts, tablets, often the entry to computing for children, are largely used for viewing television programs, movies, playing videogames and surfing the web.

As devices which promote a kind of infantilized computing (as browsing), it is not possible to make anything with them outside of highly prescribed frameworks; images destined for instagram, video’s for youtube etc. In parallel, the reduction of software which was designed according to industrial standards [e.g. print or broadcast] to “apps” which can only produce media suitable for user generated content platforms, often owned by the same corporations that sold you the device in the first place; the “down-down regime of (mutual) self-control and visual self-disciplining” referred to by Streuyl, parallels the deskilling and erosion of employment conditions affecting the so called creative industries. (Streuyl, 2012: 167)

**Critiques of network culture**

As so called network culture has matured over the last decade in particular, dissenting voices have arisen to suggest that beneath the utopian claims for the information revolution lurk unpalatable realities such as the *personalized* net and the economic exploitation of a globalized workforce amidst the consolidation of media assets into the ownership of elites. Eli Pariser writes in *the filter bubble* of the necessity for users to recognize the editorial bias of search engines and social networks, in the
form of algorithmic design and behavioural tracking motivated by marketing which has become inherent in apparently neutral browsing activity;

We've always used filters of some sort, but in this case we don't know we are. We think of the internet as this place where we directly connect with information, but in fact there are these intermediaries, Facebook and Google, that are in the middle in just the same way that editors were. This is invisible; we don't even see that a lot of the time there is filtering at work. It is hard to know what's being edited out. And it is not like reading a magazine where readers are seeing the same set of articles. Your information environment could differ dramatically from that of your friends and colleagues. (Pariser, 2011)

Morozov goes further, suggesting that so called participatory culture, linked both to an ethos of “do it yourself” and the individual promoting themself as an online brand, represents an abandonment of the public sphere which creates a crisis of politics.

Shifting a lot of the responsibility to the individual is a very conservative approach that seeks to preserve the current system instead of reforming it. With self-tracking we end up optimising our behaviour within the existing constraints rather than changing the constraints to begin with. (Morozov, 2013)

Streuyl connects the popularity of user generated content uploads to behavioural design and the tendency for contemporary technologies to encourage their users to willingly abandon privacy in exchange for conformity and social status. She argues that in doing so, users are offering up the data upon which a society of control is being created.

Social media and cellphone cameras have created a zone of mutual mass surveillance, which adds to the ubiquitous urban networks of control, such as CCTV, cellphone GPS tracking and face-recognition software. On top of institutional surveillance, people are now also routinely surveilling each other by taking countless pictures and publishing them in almost real time.

The social control associated with these practices of horizontal representation has become quite influential. Employers google reputations of job candidates; social media and blogs become halls of shame and malevolent gossip. The top-down cultural hegemony exercised by advertisement and corporate media is supplemented by a down-down regime of (mutual) self-control and visual self-disciplining, which is even harder to dislocate than earlier regimes of representation. This goes along with substantial shifts in modes of self-production.

Hegemony is increasingly internalized, along with the pressure to conform and perform, as is the pressure to represent and be represented.

(Streuyl, 2012: 167)
An example of the promotion of such an internalized pressure can be seen in the advertising copy used by the web development service squarespace;

“Squarespace is the best solution for building and hosting a website and a personal brand if you’re an author, blogger, artist, photographer, small business owner, entrepreneur, or anyone else looking for a powerful, yet beautiful website that doesn’t take a degree in computer science to operate. You’ll feel like a design genius with Squarespace’s LayoutEngine, which allows you to easily drag and drop your website into being.”

In the Social Factory?

The confluence of artist and entrepreneur in online culture, expressed in the notion of a personal brand, represents an area of research linked to labour conditions in the creative industries of neoliberal economies. The economic potential for media workers is regarded as increasingly precarious, as shown by research into immaterial labour by Gill and Pratt.

Studies have highlighted a number of relatively stable features of this kind of work: a preponderance of temporary, intermittent and precarious jobs; long hours and bulimic patterns of working; the collapse or erasure of the boundaries between work and play; poor pay; high levels of mobility; passionate attachment to the work and to the identity of creative labourer (e.g. web designer, artist, fashion designer); an attitudinal mindset that is a blend of bohemianism and entrepreneurialism; informal work environments and distinctive forms of sociality; and profound experiences of insecurity and anxiety about finding work, earning enough money and ‘keeping up’ in rapidly changing fields. Structurally, research has also pointed to the preponderance of youthful, able-bodied people in these fields, marked gender inequalities, high levels of educational achievement, complex entanglements of class, nationality and ethnicity, and to the relative lack of caring responsibilities undertaken by people involved in this kind of creative work. (Gill and Pratt 2008: 14)

Jaron Lanier agrees with Gill and Pratt in terms of the industrially defined ‘creative labourer’ being structurally at odds with the role of caring or family responsibilities.

The Internet, in its current fashionable role as an aggregator of people through social networking software, only values humans in real time and in a specific physical place, that is usually away from their children. But dignity is the opposite of real time ... Dignity ought to be something one can earn. I have focused on parenting here, since it is what I am experiencing now, but the principle becomes even more important as people become ill, and then even more as people age ... the current fashionable design of the Internet, dominated by so-called social networking designs, has an anti-human quality. (Lanier, 2010)
Satirical Banners - Deterritorial Support Group

Activist designers such as the Deterritorial Support Group satirise the extent to which contemporary resistance may be deemed to be linked to the user actions of ‘retweeting’ a message on twitter or ‘liking’ a facebook entry.

The group, not uniquely amongst contemporary artists, designers or activists working with digital media technologies, question whether the stated objectives of deterritorialisation & rereterritorialisation can be facilitated in this way. The rhetoric of new media in terms of its potential to offer its users opportunities for resingularizaton [Guattari] is hereby problematized using heavy irony.

**Physical computing**

I have argued that opportunities for visual communication through montage are paradoxically reduced due to the nature of the social media systems which have been critiqued in the previous pages. However, a fertile area for development of interactive montage may be represented by some of the new entry points into computing being designed for the young.

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The ‘Kano’ computer kit, built on the raspberry pi microprocessor
The ‘Kano’ computer kit, built on the raspberry pi microprocessor perhaps encourages users to see the computer as a series of interchangeable components, as opposed to the currently prevalent sealed touchscreen media readers whose manner of operation is kept hidden, beyond access. As the component relations that constitute the device are once again opened up in this way, rather like they were in the 1970’s era of kit computers, then it is possible that the nature of our operating systems and the way in which they remediate the moving image may also become open to question.

This project is one of several emerging from crowdsource funding platform ‘Kickstarter’ in the last 12 months. Another such project, which is aimed at teaching children to code, ‘Primo’ is pictured below. It introduces programming concepts such as objects, variables and loops via tangible blocks which users can arrange into slots, thereby controlling the movements of a simple robot. These projects are linked to the practice element of this chapter, which concerns undergraduate curriculum design.

The strategic use of physical computing is a significant component in the structure of the BA Digital Media that is featured in the following section.

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The ‘Primo’ interactive learning toy for teaching principles of programming
Curriculum Design

In 2010 I became the course leader of the new BA Hons Digital Media at Falmouth University. This section reflects on how the research project as a whole has inflected upon curriculum design for a broad-based undergraduate degree program.

The recent history of the media school at Falmouth is rooted in a media studies and industrial practice pedagogy at odds with my own background in interaction design and its very different culture of learning. I was taught in an environment emphasizing making and reflection in action, a traditional British art school model which privileges learning through doing / experimentation over textual analysis / genre studies. Arguably, such media studies type frameworks have a tendency to promote an acceptance of media practice as currently constituted and can produce imitative student work.

A strength of what might loosely be termed the art school bias is its promotion of student’s creative energy, particularly in areas of ‘new’ fields of practice yet to be fully defined theoretically or lacking canonical examples. A potential weakness in this model is its lack of emphasis on critical studies or broad philosophies of media, culture and society. In terms of the teaching of interaction design in particular; a process of rapid prototyping, incorporating testing & user feedback into the development cycle of a project is a key element of the practice. The type of knowledge accumulated through such a process differs from a media studies approach, which places understanding media as texts at its core.

Not wishing to retreat into redundant binaries, the curriculum design sought to use potential differences in approach in a number of purposeful ways. An example of this is problematising the relationship between technologies, languages and subjectivities as the theme of a unit.
The example below is extracted from the 2nd year unit guide *Theory Writing 2*

“This module introduces a range of contemporary theoretical positions that have informed and arisen from the formation of new subjectivities and ontologies as a product of interactive media systems. Writing in this context is a practice constitutive of subjectivity, therefore not confined to analysis but determinate in the first instance of interactive media praxis. It is not an object of study but the logical habitat of creative practice – you will be expected to make media from a theorised position.”

As this unit descriptor demonstrates, the course asserts that writing is a kind of making, thus removing the theory / practice binary from the curriculum.

**Hybridity and specialist techniques**

In a loose interpretation of Raymond William’s model, the degree is constituted of residual, dominant and emergent elements. The residual element is the training in camera, lighting, sound recording and many aspects of media production and post production the students receive. This ‘skillset’ approach has been retained, to an extent. However, rather than being the core of the degree’s learning culture, it is an adjunct to its main purpose. The dominant element is the broad curriculum structure, reflecting the hybrid nature of digital media practices under a communication design umbrella, both in terms of theoretical studies and practical tuition. The emergent element is the problem based learning approach as discussed here at the Differences and Repetitions Wiki:

**Problem based learning**

So much of what gets labeled “creative” work, both Bergson and Deleuze contend, is preoccupied with finding the solutions to problems others have devised. In this way, so-called “creative” work habitually disposes itself to a reactive mode of operating, because it executes its labor within sets of parameters, terms, and conditions others already have dictated or imposed. True creativity, and thus real power, they claim, are to be found not in the solving problems, but in the posing them: “As if we would not remain slaves so long as we do not control the problems themselves, so long as we do not possess a right to the problems, to a participation in and management of the problems,” observes
Deleuze (1994: 158; see also Bergson, 1992: 51). What makes problems powerful, assuming they’re well posed, is that they introduce wrinkles into the fabric of reality, causing it to start twisting and turning, bunching and tearing, unfolding, and refolding. In other words, problems are what spur on becoming; they’re what actuate history. “[T]he history of man [sic], from the theoretical as much as the practical point of view, is that of the construction of problems.” Deleuze states. “It is here that humanity makes its own history” (1991: 16).

The problem based learning approach is now pivotal to the structure of the course. A series of themed units are the outcome, and the design of “systems & users” a level 1 unit is discussed in more detail later in this section. The praxis approach [theorised practice] has a leveling effect on the course structure. All projects are critically framed, whatever their formal outcome. There is an attempt in this way to remove genre and habit from the students thinking and making.

The design of the course web space reflects this, being a grid made up of various student projects. There is no index or division of the material by ‘type’. Film projects sit next to installations, interaction design etc., within a grid which rearranges itself as the user moves around the site.

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Student project www.dmio.co.uk. Course web site. [2012]
Three tangible MIDI step sequencers control a distributed audio-visual composition themed around the reconstructive nature of memory recall. The sequencers were created to explore how the input of digital messages can be abstracted through the introduction of tangible objects and tactile physicality, in order to create engaging control interfaces.

By placing blocks into the sequencers, users can create looping sequences, with the faces of each block corresponding to a different trigger and with a dial to change the speed of each sequence. As blocks are moved, added and taken away by users across the three devices, they form a live, shifting, collaborative audio-visual composition. (Williams, course work hand-in 2013)

The above project by Oliver Williams, a second year digital media student, is an example of the work emerging from the interaction design specialism within the degree. The piece is designing a symbolic audio visual and tactile language to act as a control system for the composition of sounds and moving images. Throughout the course, students are challenged to articulate routes of escape from habitual media design, using techniques that disrupt user expectations in terms of standard media container formats and experiences. The following section details how the curriculum design of one such unit was achieved.
Mineral Tramway BA Digital Media teaching unit

A site-specific media design project in a collapsed industrial zone.

Designed & taught by James Moore & Barry Cooper

Goon Gumpas, Inland Cornwall, showing polluted water table & discoloured soil

In a world variously called postmodern, late capitalist, or simply Empire, a world in which power has been centred, virtual centres of power exist everywhere. We might say that these virtual centres of power are our own subjectivities, and thus that the battle ground against this power is in some sense ourselves. Hence the importance in understanding politics - and political art practice - as not just being about institutional and ideological critique, but as involving the active production of our own subjectivity. Hence also the importance of creative pedagogy; teaching practices that involve student participation, workshops, 'laboratories', and other teaching models that do not mimic the top down structures in existence elsewhere. Such pedagogical practices can contribute to the active and practical involvement of individuals in determining their own intellectual and creative projects, and indeed their wider lives. (O'Sullivan 2007)

In my role as course coordinator for the B.A. Digital Media at Falmouth University I have been responsible for the design of a program that has moved the school of media away from a previous broadcasting model towards a communication design model that synthesizes several of the approaches referred to here. The design rationale outlined in the earlier sections has been applied to teaching undergraduate digital media, specifically in a data visualisation unit which took as its theme Felix Guattari’s text The Three Ecologies. Students were asked to consider Guattari’s core idea, that our physical environment cannot be disconnected from either the socius or our human subjectivity, in relation to a particular site in south Cornwall.
The students were directed to make speculative montage work, imagining the territories as contested sites rather than depicting them as knowable landscapes. This was achieved through restraints in the design brief that disallowed habitual responses.

**Rationale**

This unit was written in the context of designing and teaching undergraduate digital media at a moment where digital communication technologies might afford us new subjectivities & opportunities for participation in contested fields e.g. neoliberalism & climate change. The creative application of new technologies and experimentation with them is seen by O’ Sullivan to be “at the ‘sharp end’ of this technological production of subjectivity, and as such are certainly a key area of enquiry for any discipline that concerns itself with ‘Visual cultures’.” (O’Sullivan 2007)

Historically, such courses have deployed structural/post structural analysis, discourse, ideology etc., as tools to study media. By moving the theoretical field to what Escobar calls Political Ecology 3 with “flat or relational ontologies” (Escobar 1996) the “tactics” of later poststructuralists like Deleuze and Guattari offer “different lines of escape” to produce new subjectivities or “singularization” (Guattari 2008) perhaps foregrounding purposeful action rather than analysis.

Using Felix Guattari’s Three Ecologies as the main theoretical text was intended to create debate amongst staff and students. As Guattari puts it, “It is a question in each instance of looking into what would be the dispositives of the production of subjectivity, which tends towards an individual and/or collective resingularization, rather than that of mass media manufacture, which is synonymous with distress and despair”. (Guattari 2008).
Theoretical context

Considering Guattari’s concern with the ecologies of the social (socius), the mind (subjectivity) and the environment, The Three Ecologies could be read as a transdisciplinary text. Further to this constellation, residual and emergent media technologies could be located within the interdisciplinary field of third generation Political Ecology as well as within more structural approaches like Althusser’s I.S.A.s (Althusser 1977) where media is one of the “components of subjectification” (Guattari p24).

Barbara Bolt’s critique of ‘representationalism’ which draws on Heidegger to consider representation as a mode of thought contributing to the subject object binary of humans/nature where “Whatever is, is figured as an object for man as subject” (Bolt p13) was also central in thinking about the design of the unit and emerged in the second guest lecture. Tim Collins presented the subject/object separation as a key concern of environmental perception and art practice, showing the students projects where residents re-experienced areas of post-industrial wilderness around their hometowns in North America. The method was direct; by walking, or taking boats down waterways, then subjectively documenting the experience.

In contrast to academic reading, walking was also the initial mode for our students to experience the area known as ‘The Mineral Tramway’, which we chose as the location of their site-specific project. The mountains of toxic waste, too big ever to remove, remain as a detached signifier of the commodities that Cornish tin mining extracted. The separation of the commodity from the slag was framed as a problem of consumerism erasing its own waste.

Beside the problematic of perceiving the environment through the subject/object binary, we added Guattari’s view that television has promoted “strategic infantalisation” (Guattari 2008) and unthinking consumerism. We made this a theoretical intervention to direct students towards a critical engagement with media practices other than an imitative learning of industrial television
making procedures. To further that end we created a method of engagement that blocked habitual narrative audio-visual responses. We explicitly disallowed character, dialogue and music in the design brief where the research question was “What is the Mineral Tramway and how do we know it?”

**Method**

Using Guattari was predictably unpopular with the students, the complexity of language and critique of mass media did not appeal to some, particularly those who wished the course to be more concerned with conventional television production than experimental theorised practice. However the text was instrumental in raising a range of challenging debates that could be directly connected to a site-specific project in our locale. The text was also useful when short excerpts or particular terminology were drawn out through student led seminar presentations, testing whether this seemingly abstract and difficult theory connected with the life worlds of the students? It often did so, thus building confidence in being able to engage with theoretical material.

This pedagogic strategy suggested all interpretations of the text were valid, in terms of not being trapped in a binary of right or wrong. Guattari’s notion of subjectivity became the focus of the project, particularly the idea that subjectivity is something in process, not an object of detached study. Donald Schoen’s swamp model of learning (Schoen 2001) was also introduced. The importance of unlearning, or not knowing is also emphasised in Simon O’Sullivan’s ‘The production of Subjectivity’ (O’Sullivan 2007). Discussing Guattari’s notion of the “ethicoaesthetic”, he says, “It also invites us to become involved in our own production of subjectivity, to move from becoming passive spectators to become active participants, to take what we need from Guattari -or indeed from elsewhere- in our own project of ‘processual creativity’; precisely to treat our lives as works of art.” This adds an interesting level of conflict with first year undergraduates, where there are still expectations of teacher centred, “jug and mug” methods rather than process models of learning.
Unpacking these existing expectations problematised the design brief, necessarily producing a useful anxiety.

Although some students clearly made little attempt to read The Three Ecologies, most of the group did. All but three of the forty students on the course were from outside Cornwall, this enabled us to work with their notions of otherness through a series of guest lectures. For example it is not immediately obvious to incoming students that they are entering an area of industrial collapse, or indeed that the university was funded by the E.U. for the social and economic regeneration of one of the poorest areas in Europe.

Dr. Keith Russ, a mining engineer who has digitised the underground mine workings around the tramway & beyond was the first visiting lecturer. Dr Russ demonstrated how he had mapped the huge honeycomb of tunnels and chambers that lies beneath our feet in south Cornwall. Thus the fixity of a reductive construction of Cornwall as a primitive, rural, seaside “Other” for tourists was challenged. Interestingly the arrival of Dr. Russ had similar effect for some of us, he arrived wearing his underground protective clothing covered in mine dirt, not for effect but as his normal attire. Russ’ work was simultaneously aesthetically engaging and extremely functional. Its purpose was to give a view of the mines as commodities for potential future exploitation. His visualisation technique served to re-spatialise once static data sets, objectifying and making strange at once.

The Reinvention of Cornwall (Deacon & Payton 1995) as a tourist destination has been so complete as to minimise representations of the previously dominant industry, mining. The high granite spine running through the middle of the landscape is almost entirely erased from the iconography of the County. It is in this location that molten granite magma melted the minerals in the rock to form veins of tin, gold and copper whose exploitation led to massive technological and economic development during the 18th century. The subsequent global discovery of tin that did not need to be deep mined
through granite led to the almost complete collapse of Cornish tin mining in the 1920s and the subsequent County Council plan to develop the area for tourism as an attempt to rescue the economy. This reinvention of Cornwall as an ‘English Riviera’, yet also primitive and backward was the theme of the third lecture, designed to question and introduce theories of “The Other”.

Psychoanalytical models of projection and introjection were raised in lectures introducing the ideas of Freud, Jung and Lacan. Next, the creation of an “other” was exemplified in a seminar through paintings by Van Gough and Gauguin in Brittany. More locally, the Newlyn School were shown to have created a simulated rural idyll during a period when Cornwall was virtually the engine house of the industrial revolution. These themes of local primitives, often women “in nature” juxtaposed with the modern metropolitan outsider, were demonstrated as persisting in recent television series like ‘Wycliffe’ (ITV 1994 – 1998) and knowingly reworked as a construct in the more recent ‘Doc Martin’ (ITV 2004 – present)

Guattari’s notion of ‘Otherness’ (Guattari 2008) suggests that tourism is a homogenising process, which by creating a spectacle of the other causes the local, [potential other] to take on a universal sameness, “with the same redundancies of images and behaviour.” In the seminars some students felt strongly that they valued ‘heritage’ towns & villages as having more sense of community. This might seem nostalgic for an imaginary or lost past but also questions what precisely Guattari is valuing in “Otherness (l’alterite)”, thus opening another debate for the students.

The Zone

This project was site specific, coastal locations were rejected because they too easily fell into the tourist gaze. Although deserted mine buildings are also part of the tourist iconography the actual mine waste does not become apparent in this representational system. Eventually it was decided to use the entire length of what has become known as “The Mineral Tramway”.
The tramway that runs from Portreath on the north coast of Cornwall was a train line constructed to carry coal shipped from South Wales to the steam engines used to pump water from the underground mines. Ore was transported further along the Tramway to be dispatched by sea on Cornwall’s south coast at Devoran. The tramway thus runs from coast to coast transecting the area of mineralisation where the mines are located, total length about 17km. Only a very small fraction of the mined rock was mineral bearing, subsequently about 8km of the trail runs through mountains of slag, which are heavy with arsenic and other toxic elements. The landscape at this point is bleak and has been used as a post-apocalyptic film location for ‘Doctor Who’ and other TV productions.

Not only does the site look grim with waste tips and the ruins of mine structures, it is often wet and misty. It is very hard to see this particular post-industrial landscape as romantic and often people visiting it wish to leave as quickly as possible to avoid a sense of depression. The toxins collecting in the stream of the valley take on a range of colours, which become lurid in their accumulation.

The student’s responses to the design question ‘what is the mineral tramway & how do we know it?’ were eclectic to say the least. In response to the explicit obstructions of the brief [no characters, no dialogue, no music] many used a variety of sensors to capture real time data in a particular measurement area. This could be self-selected from any point along the tramway.

Some examples of these were; sonar, vibration, temperature, wind, rainfall. The method of this type of data gathering was through sensors interfaced with Arduino. This data was then visualised through a series of experiments using tools such as flash / processing / augmented reality devices / tangible interfaces / movement tracking & lighting. This activity was supported through a series of technical workshops around data capture & visualisation.
The students were also able to employ archival data sets from a wide range of local sources, from photographic to registers of births, deaths & marriages. They were provided with research contacts at the Cornwall Records Office, the Falmouth Industrial & Maritime Museum, The National Trust & Camborne School of Mines [a major mining research ctr]

Sample student projects

“Gumpasland, where dreams are made”

This project utilised augmented reality to deploy virtual scenarios into the ‘real’ environment of a former opencast mine at ‘Goongumpas’, which is now a toxic and restricted area. Used as a ‘mountain biking’ trail and awaiting a greening process where land is remediated, Goongumpas is an alienating, otherworldly landscape. In many respects it represents the hauntological dimension of an industrial past that is under erasure, but will not go away. The seepage of a polluted water table continually resurfacing as a series of incongruously coulored pools which punctuate desolate slag piles in an inland territory from which there seems no escape. The virtual models, which the students situated amongst this landscape, included new housing developments and a theme park. This demonstrated their engagement with the unit’s themes of simulacra, heritage and otherness. The user was able to wander around the landscape of Gumpasland until they came upon a signpost, which had printed on it an augmented reality symbol. Once detected in the image field of the head mounted camera, the virtual model was composited in the users video goggles as a real time overlay.

“Life down a shaft”

The Cornish mining industry utilised child labour. Children were useful for their size, in particular to enter chimneys lined with arsenic, which it was their job to extract. This, alongside the generally poor working conditions underground had the predictable effect on their life expectancy. The project ‘Life down a shaft’ visualised statistical data relating to deaths in the Cornish mining industry. A grid
system was devised [initially envisaged as an l.e.d. matrix and later translated into a projection based system] into which visual data would be displayed. A database of names and associated numbers was ‘read’ into the development framework processing. Each name was a person who had died in the mines, the number represented their age at the time of death. As the system worked its way down the ‘list’ of deaths, the text-to-speech function of the mac os would read their name and a ‘light’ or pixel of a particular size & duration would appear, depending on their lifespan. So a child who had died would appear as merely a small speck, illuminated for a very short time, adults larger and for a longer duration.

Although visually abstract, this networked installation had a haunting, memorial quality that reinserted the human. This project pushes at the limits of the ‘obstructions’ in the brief in an interesting way. Although no characters were allowed, the ‘naming’ of an individual, though they are never depicted, begins to create a more traditional chain of emotional signifiers. The success of this project seemed to exemplify the problematic at the heart of the unit, that whilst complexity resists representation the tropes of traditional media production are deeply embedded in subjectivity for both this generation of digital media students and their assumed users.

Goon Gumpas, Inland Cornwall
Student Project “Gumpasland”.

Site specific walking performance & augmented reality headgear [2010]
Montage Politics

&

Practice research project “Russell Sq.”
Cinema, Future Cinema and the problem of the ‘time image’

Mark-Up Layers, tags & meta-data

The Cut/Mask

Open & closed systems of interaction

Stan Douglas

John Smith

Recombinant poetics

Machinic Assemblages
The field encompassing this research is a hybrid one, both in terms of traditional forms of media and tactics. However, a theme that continually reasserts itself is the linkage between aesthetics, specifically montage, and the politics of representation in the practices that have been analysed. This linkage is also a defining characteristic of the territory to which the practice aspires. This can of course be approached from multiple viewpoints, and some of the artists referenced here use opposing strategies, which I do not set out to unify. This section maps in particular to the practice project Russell Square.

**Cinema, Future Cinema and the problem of the ‘time image’**

*Future Cinema* denotes not only practices at the technological cutting edge but also references work in the pre-digital avant-garde. The analysis of future cinema here incorporates relevant precursors such as the expanded cinema period, film installations and actions and mixed media theatre – examples of which continue to exert an acknowledged influence on contemporary artists and designers.

The problematic at the heart of this research concerns the incompatibility of the dominant theory concerning the moving image (it’s production and reception) with developments in the dynamics, mode of operations and aesthetics of emergent on-line spaces. The strand of cinema pertinent to this research may be best summarized in Deleuze’s desire for what he termed the *time image* to generate “a new system of images and symbols...a whole audiovisual system”

Setting itself against the totalising tendency of the moving image, Deleuze identified the disjunction of sound and image as one aesthetic strategy to confound this tendency and identifies two filmmakers in this regard, Hans Jurgen Syberberg and Jean Luc Godard.
In Filser’s analysis of Syberberg she notes

“It’s not sufficient to replace one technology with another – cinematography with electronics – rather it is a case of overcoming information, in order to lead cinema out of it’s crisis. Syberberg succeeds in doing so by unfolding an informational space, a non-causal structure, in which “the trivial and the cultural, the public and the private, the historic and the anecdotal, the imaginary and the real are brought close together.” And by expressing it’s complexity by means of the audio-visual image: “This goes beyond the psychological individual just as it makes a whole impossible: a non-totalizable complexity, non representable by a single individual.”

“The life or the afterlife of the cinema depends on its internal struggle with informatics,” states Deleuze at the end of his analysis of Syberberg. A possible future cinema would therefore be the audio-visual image in its most complex form, permanently interrogating information as to its source and its addressee. Perhaps this future cinema a la Deleuze may be defined as follows: that which forces information to think and us to think information. (Filser 2003: 214 )

This research project posits such a “pure informed person” as the user in a moving image centered system of distributed authorship.

**Mark-Up Layers, tags & meta-data**

The practice of Digital Retouching has been used as a case study. Using a pen on a sheet of acetate placed over a proof image, now a layer in Photoshop and a graphics tablet the re-toucher alters the photographic image, adding or removing features, compositing elements from multiple sources into an apparently coherent whole. The mark-up layer, holding the data of what has been altered, how and why, is then discarded. The notational system, in this case the gesture of mark-making, might provide an alternative topography of what constitutes an image, if we transplant this into an expanded notion of what a ‘comment layer’ may become. Currently, this is a privileged discourse, with closely guarded files such as these only available to media professionals. As a process it is never meant to be seen by the consumer, thus it reveals more about communication being designed.

Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions

Retouching example – advertising work in progress
The platforms being developed aim to place the user in the role of a conscious compositor, this proposes acting in-between layers of material and exploring construction / creation and communication processes. This might be explained by contrasting passive viewing with the position of media professionals - here a range of artists, editors, producers and distributors undertake processes that are fundamental to the production and consumption of moving images. This is a linear process leading to a finite ‘product’. These images and sounds, framed by the computer, film or TV screen, conceal all the industrial and aesthetic processes used to create them, yet it is not possible to understand them in isolation from the complex that produces them.

The task of the research project is therefore not simply addressing the politics of representation, but rather embedding in the control mechanisms of the designed system attributes that both generate plurality and are deconstructive in their nature. For example, graffiti in a ‘real world’ environment adds a layer of meaning or meanings not intended in the initial design of the architecture. Rather than resisting this, the system envisaged would encourage and nurture this behaviour.

The deliberate separation of sound / image / text in the systems the research is generating is intended to retrieve something of the primary language of these elements and allow the user to operate in the space between. This approach is distinct from the contemporary multimedia of screen based interaction design, drawing from a tradition of radical theatre, fine art and cinema, where the dissociation of familiar elements is used to heighten the critical awareness of the audience.

The Cut/Mask

Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions

John Stezaker - Pair IV, 2007
In the following interview, Stezaker speaks about his compositional method, which relates to the design strategy adopted for the OM project. For Stezaker, the assumed user is always seeking narrative resolution and therefore his strategy is to somewhat tease the viewer by denying them it, but knowing that the imaginary is at work in filling in the gaps. The works are a rather simple yet elegant visual conceit. In the latter research projects, such as Russell Square. with its manner of operation [shadowing, revealing] and especially OM, the user is presented with similarly basic options for transformative operations. This limited palette forces the user to confront the meaning generated by a juxtaposition, cut or composite for which they are responsible.

I think of it as a very literal opening up of the image ... That liminal experience, that experience of things in-between ... making the 'Tabula Rasa' cuts oblique and perspectively compatible with the image that it was housed in seemed to work. I found that it ... created an ambiguity in this contact between the image and the void. I think the 'Tabula Rasa' collages point to the impossibility of any kind of formal grasp of the contemporary, technological image. The cultural image is always in transformation. Perception is always somehow one step behind, chained to narrative and in a perpetual state of partial awareness and dominated by an unsatisfied desire for completion. (Stezaker 2011: 45)

**Open & closed systems of interaction**

*Mariopaint [1992]* for the super Nintendo entertainment system is a creative play videogame which enabled the user to draw, animate and compose music. It was packaged with peripherals [a mouse / mouse mat in addition to the game cartridge] and instructions for how the musical compositions and animations could be output to videotape. The paintbox style app was basic, with a limited range of colours, brushes, backgrounds and clone stamps that the user could create. It was also possible to save your artwork to the cartridge memory. The animation package allowed the user to make multiple drawings to design simple motion sequences in 4, 6 or 9 frame animated loops. The music generator was a basic linear score on which you could compose from a pre-existing library of sounds. Although it offered the user only a limited palette of options the open nature of the game [the start up screen of the game depicting literally a blank piece of paper] was atypical and this gave the title a cult status. The album “mariopaint” by the electric family, released by the independent irdial record label was created entirely with this program.
Under the influence of not only such restrictive game systems as Mariopaint, but also the basic but highly effective montage capabilities of video wipes / masks / titling systems / cross fades of the sonimage era Godard and Mieville work, the final practice project Open Montage adopted a basic grid Structure for cropping and a simple typographic layout tool. Such systems may be graphically simple but represent a transfer of authority to the user who must become much more conscious of their every action when confronted with such a limited range of options.

Stan Douglas

Working with game-like engines and affecting the materiality of video, Douglas is dealing with similar structural issues, though not in the ‘game’ form, and with very different aesthetic outcomes.

Douglas offers, in the first place, a statement on authorship in the age of limited agency; in the second place, a reflection on the possibility of political art. Douglas’s work offers us a new installment of his ongoing attempt to answer the question as to how a political art is possible that does not depend on the many traps that caused the demise of the critique of ideology. Of these, the most obvious are the illusion that one can avoid ideology; the didactic belief in consciousness-raising; the confusion or unreflected transfer between social and psychoanalytical issues; the contempt for aesthetics based on an unwarranted ideology or artistic autonomy; and the narratological collapse of the ideology of character and artist. (Bal 2007: 71)

Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions

Stan Douglas Nutka, 1996

Nu-tka- is a video installation in which two separate images are interlaced on the same screen.

Rather than integrating the scan lines of video into a single image, Douglas presents two related but significantly differing images of the same territory. As a viewing experience this is unsettling, as we are perhaps aware that this is how video images function, at least until recently, and therefore we
wish the image to resolve itself and become clear. Only briefly does this occur in the piece however.

More frequently the panning camera is causing half of the image (every other line) to move away from the other half of it. Rather than representing an error, Douglas uses the incoherence of the interlacing as a metaphor to represent a contested subject.

Two voice overs play simultaneously, and like the images they appear to be telling us the same story, except momentarily the story being told to us bifurcates, so that two voices who were speaking in time with one another are now opposing each others narrative and speaking simultaneously to fight for our attention. The voice actors are playing the roles of two commandants; the English James Colnett and the Spanish Esteban Jose Martinez. Each of these colonial powers claimed ownership of the territory we see depicted in the video. As their voices move out of sync with one another, so does the image of the landscape.

As the narrators go their separate ways - recounting their contempt for one another and inability to endure the situation in which they find themselves - the interlaced image pulls apart also. Outside of the six synchronous moments, the narratives, like images, are blurred and doubled, at a limit of legibility, sublime. The interlaced raster lines of Nutka make for a striated screen that stands for misunderstandings and mis-seenings of the would-be rule of Spain and Britain. The technologically enabled doubleness replicates neatly the technological measuring and controlling of Deleuze and Guattari's definition. (Townsed-Gault 2007: 119)

More than any other contemporary artist mentioned here, Stan Douglas may be considered an heir to Godard in terms of his reflexivity around the technology of the moving image. In particular, his use of computer controlled video environments / algorhythmic cutting which takes the deconstructive tendencies in late Godard potentially a step further.
The Girl Chewing Gum

John Smith’s 1976 film The Girl Chewing Gum is an earlier experiment with audience expectation in the form of an apparently everyday street scene accompanied by voice over that appears to represent the director of the film instructing actors about their movements. As the film progresses the statements of the narrator become unreliable and then preposterous. Cleverly and humorously, Smith draws our attention to the ideological quality of narrative communication being created. Smith reflects on the process of making this film;

I was surrounded by people who were saying, "Narrative is the power of illusionism, it's evil." The structural materialist kind of approach to film. And I thought, "Goddamn it they're right! I've been had! How can I be making films for three years and not realize that?" ... I thought, "Okay, I'm going to film on a street corner, and I'll use a 400 foot roll of film, and I'll film what happens on the street, and then I'll direct it later." So that was the plan.

Smith deconstructs temporal location & the voice of authority in this film, to the point that representation itself is undermined for the viewer. In a related project within this research, [Read-through] the film A Sunday in Hell is re-appropriated towards a related end, the deconstruction of a voice of authority narration in this case by means of repetition until the phrases become ritualistic or
absurd, in what might be termed an algorithmic cut-up technique.

**Recombinant poetics**

If the approaches of Douglas and Smith are designed to force the viewer into acknowledging the ideological nature of fixed presentations in film form, other artists have sought to develop alternative systems for the composition of moving images which combine archival material with real time or generative editing and compositing. Manovich calls this approach database cinema.

In ‘Recombinant Poetics’, while describing his project ‘The World Generator’ Bill Seaman explains such a mode of operation in detail, in terms of the technology he was using at the time.

New digital video enables edits and abstractions that are fragments of the frame itself ... The important concept is that a computer can mediate different forms of addressable space – be it technological space i.e. digital video, digital audio, virtual environments etc., or space that becomes physical in a different manner — i.e. architectural space, robotic space, the space of analogue video on a disc etc. I see these differing spaces as a continuum — highly bound/interwoven. We can talk about such a continuum as a space where operative energy processes bring about dynamic relations through interaction. The computer itself should be seen as a dynamic energy process, a enabling device embedded in a coupled environment or functioning as part of a distributed process/environment.

By exploring different attributes of the interactive video, a participant can explore both a smooth flowing pre-edited linear work, defined as a singular video segment as well as interact with operative fragments that can be recombined, viewed over and over again, repositioned in time, navigated etc. (Seaman 1999: 5)

The World Generator Bill Seaman

A potential problem for what Seaman calls *meta-meaning* in kaleidoscopically beautiful media art, or the database cinema of Lev Manovich that produces a series of changing phases or events is legibility. For it seems to imply meaning is endlessly deferred. In this regard, the techniques of audio visual layering / complexity & dissociation are essentially post-modern, their perhaps mild *electronic*
alienation effects willingly received by educated users / viewers. A meaningfully participatory moving image culture would perhaps need to become less of a fashionable derive and more active & purposeful in tangible terms. How might interaction designers begin to grapple with the use of the moving image in interactive systems as an interrogating communication tool, capable of altering our relation to it.

Machinic Assemblages

Bolt, here unpacking Deleuze and Guattari’s concept of machinic assemblage, issues the following warning with regard to the status and fate of such cultural objects.

At one level it could be argued that in these particular assemblages, we see a type of revealing that is an enframing. According to such an assessment, items from the standing reserve are ‘transformed, stored, distributed and switched about’ (Heidegger) in order to make assemblages. Thus a challenging revealing characterised by orderability and substitutability could be seen to characterise the art assemblage. From this position, does the art of assemblage just make more standing reserve? If this is so, then in their role as the orderer of standing reserve, artists remain within a representationalist relation with the world. On the other hand the art of assemblage can be seen to do more than just add to standing reserve. In their capacity to create connections and couplings in a free relation that starts something on its way, assemblages enable a poetic, enframing revealing. (Bolt 2004: 80)

Bolt questions whether assemblage can be an appropriate technique where artists are seeking to escape representational models. In the case of the practice piece that accompanies this chapter, it was in the spirit of “starting something on its way” that the project Russell Square was designed. In addition, whilst it may be suggested that every conceivable image (e.g. of London) has already been created, and by extension we might say no more images are required of anything, only mechanisms by which we might alter our relation to them? it seems likely that history has not actually ended, and therefore new images will be useful, alongside existing ones. If this is the case then assemblages are not automatically created only from the existing ‘standing reserve’. 
This project began as a formal inquiry into digital compositing as a technique for exploring representation. It attempts to identify some of the aesthetic and technological barriers precluding a situation of open montage. It arose in part from the statement: “There is no message independent of the relation between sender and receiver and that relation is not understood in terms of some neutral channel but rather as a complex which cannot be analysed into separate components” (Godard 1980)
The video is a single channel output from multiple inputs. The project was shot in Russell Square, London in the aftermath of the bombing of the underground in the summer of 2005. In the subsequent days, police sealed off several streets, creating large ‘screen’ like surfaces at building height. In the video, these screens can be seen being patrolled by police, while the street life of the city continues at ground level, the large blank areas of the frame become virtual projection surfaces onto which other, counter-environments (realities) appear to be projected (actually digitally composited). This project is a meditation on the scepticism engendered by broadcast media’s representation of complex realities, which are irreducible to a single image or author. It is attempting to produce a dissensus image machine to counter this tendency in traditional montage procedures.

The project was revisited in 2010 in the form of an interactive installation. In this 2nd iteration of the work the various images [captured from opposing locked off camera positions] are projected on either side of a semi-transparent screen, resulting in a ‘live’ rather than pre-rendered composite image as had been the case in the previous version. The viewer controls the selection of shots that make up the composite and their speed of playback from their position in front or behind the screen,
as well as determining the playback speed of a soundtrack according to their proximity from the screen’s surface.

The video sequences on either side of the screen are independently controlled by the position of the observer[s]. This was achieved using the development framework ‘Processing’, interfaced to an arduino board with a proximity sensor attached. As shown in the diagrams the sensors are positioned on the floor of the space near each projected source. When an observer moves in front of the screen their body obscures one of the images by casting a shadow on the screen, enabling them to see more clearly the other image. When there is more than one observer the effect is doubled, so that they see more clearly the opposite image and their opposite observer, who becomes part of the composite image field. The observer[s] are brought into an intuitive awareness of the way in which their movements are effecting the composition by perceiving the tempo changes in image / audio as they orbit the screen.

The images used set up two counter-environments that were captured by simply selecting alternate camera positions within the Russell Square location. Filming took place at the corner of Russell Square next to the entrance to the park. In one shot the camera faces out towards the street, thus recording the site of the bombings. The alternate shot captures the simultaneous scene in the park, which is behind the camera. This consciously plays with the cinematic convention of reverse angle. However rather than using this technique to suggest a continuity of action or dialogue it is used to attempt the opening of a dialogic space, one of potential discontinuity in environment or perspective within the same location.

The sequences are of fairly long duration with few edits and deep depth of field. In this way the footage takes on a more observational quality, yet avoiding the camera angles associated with surveillance as its shot at street level. Figures can be seen going about the business of life in the city,
in spite of the atypical backdrop to their actions. In one of the sequences the camera faces into the ‘street scene’, which shows multiple figures crossing the frame, walking, cycling, driving vehicles. This sequence is visually busy. In the background police can be seen controlling access to the tube station and streets in close proximity to the bus bomb, which are cordoned off and screened from view.

The reverse angle shows an idyllic summer scene, a city park with sunbathers and picnicking groups sitting on the grass. This imagery might be read as supporting the rhetorical statement that in the aftermath of the bombing of the city, Londoners “will not be cowed”. This phrase became a mantra immediately subsequent to the attacks, used by both major Ken Livingstone and Prime Minister Tony Blair and echoed persistently in the media.

The terrorists were trying to use the slaughter of innocent people “to cow us, to frighten us out of doing the things that we want to do, trying to stop us from going about our business, and they should not and must not succeed. "When they try to intimidate us, we will not be intimidated. When they seek to change our country or our way of life by these methods, we will not be changed”. (Jones 2005)

'Open' and 'closed' presentations

The official discourse and the alternative and oppositional replies furnish the images, arguments and points of reference around which television’s presentations of terrorism and the state's responses are organized. But they do not pass through the television system like a stone through water. The raw ideological material they provide has to be actively worked on and turned into watchable television... Some types of programming (such as news bulletins and action-adventure series) are relatively closed and operate mainly or wholly within the terms of reference set by the official discourse, But other forms (such as 'authored' documentaries and single plays) are relatively open in the sense that they provide spaces in which the core assumptions of the official discourse can be interrogated and contested, and alternative and even oppositional themes presented and examined. (Elliott 1986: 268)

From this author’s perspective as an adopted Londoner the way in which the aforementioned rhetoric was taken up by media as evidence of a blitz spirit, alongside descriptions of prime minister Blair as “Churchillian” was particularly unwelcome. Further to this, the frustration of being a subject of state media in such an environment led to a desire to make images that would try and express
something else about being in London during those days. The audio for the piece comes from sittings of the Iraq war inquiry some years later.

Russel Square. Interactive Installation 2010
Precursor; The Television work of Jean-Luc Godard

&

Practice research project “OM [open montage]”
Image As Index

Sonimage

Jameson on JLG

Image Decompositions

Grids & Text - Numero Deux

The Composite and Duration

Communicative Capitalism

Heterogeneous Becoming
"Any image from everyday life will thus become part of a vague and complicated system that the whole world is continually entering and leaving ... There are no more simple images ... The whole world is too much for an image. You need several of them, a chain of images"

*JLG voice over in Ici et ailleurs [1976]*

The research has linked present debates concerning digital video in interactive systems with the theoretical positions and films of radical cinema, such as Debord, Syberberg and particularly Jean Luc Godard. In his television work produced in the 1970’s in collaboration with Anne-Marie Mieville, Godard investigates and critiques the complex of television itself.

**Image as index**

A recent conversation with a friend concerned the below image of the Bullingdon club, which has gained notoriety since the conservative party purchased the copyright to it in order to remove it from circulation. My friend had an idea for an interactive artwork based on this image that would allow the user to hyperlink metadata to and from it, providing an index of user responses & interpretations. This kind of image as index has been the project of Godard’s career. The film Letter to Jane interrogates an image of Jane Fonda in Vietnam in a similar way to my friend’s imaginary interactive artwork.

*Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions*

In the recently published volume *Art of participation*, Manovich says of Godard;

Modern art may be understood as conversations between different artists or artistic schools. That is, one artist / movement is responding to work produced earlier by another artist/movement. Thus Modernism reacted to classical nineteenth-century culture, Jasper Johns and other Pop artists to
Abstract Expressionism, Jean-Luc Godard to Hollywood-style narrative cinema, and so on. To use the terms of YouTube, we might say that Godard posted a video response to one huge clip called "classical narrative cinema." But the Hollywood studios did not respond - at least not for another thirty years. (Manovich 2008: 76)

It is difficult to argue seriously that Hollywood-style narrative cinema has reacted to Godard at all, even after 30 years. The only American films that might be said to have reacted to his work e.g. Medium Cool [Haskell Wexler 1969] could not be described as Hollywood. Perhaps Manovich is mistaking Godard’s project for the surface style of the new wave and not seeing the depth model underneath?

Sonimage

As McCabe states of the Sonimage project during this period,

“whereas production and consumption are usually separated in mass communication, Godard / Mieville attempt on the contrary to set up genuine communication between them: the viewer, by understanding what is going on underneath, is aware of participating in this. They even declare that we should pay viewers to watch television, since it is they who determine the production line of communication. They call into question our value codes, encouraging us to see the real beneath the superficial and to take an interest in both speech and silence. They offer us the plurality of views which conventional television obscures.”

In a document that Sonimage produced for the Mozambique government Godard reveals his interest to be primarily the superstructure producing, controlling and distributing communication.

Current Situation; In general, a country which goes in for television (after first going in for radio particularly) begins by equipping itself with one or several transmitters (stations) from which

It sprays > Or > It floods

The territory that it declares its own. And as it doesn’t have its own programs, it goes into debt culturally and financially to neighbours, close or distant, who already possess the same system of spraying or flooding.

And as it has already gone into debt to buy the technical equipment (cf. Tele/Zaire), it is thus a double cultural and financial debt that it takes on, accumulating in this way a parasitic capital which will, sooner or later, shatter its hopes of independence (like a delayed action mine or virus-so true it is that communications (l’information) in general has in particular something to do with cancer).

The questions which a television and cinema enterprise like Sonimage asks itself are the following:

‘Before sending out an image, perhaps we should ask what image, or an image of what?’
‘Before appointing a minister of posts, perhaps we should ask if one needs or wants to write a letter, and to whom and why (to do what) and against what?’

And if time equals money, the speed or slowness with which one replies to these questions are each worth different amounts of money.

(JLG/Sonimage document in MacCabe 1980: 138)

Marie Anne Lanavère states that Godard / Mieville;

Muddle the information – which ought conventionally to be objective – by their subjective interventions (comments by Mieville... distancing by Godard... ) Aware of their power in terms of opposition, they inaugurate a form of production of televised information in which we can discover the hidden side of things, notably communication being produced. Going against the conventions specific to television shows (speed and abundance of images which captivate the viewer), they prefer slow motion to leave us the time to see. Text inserts (hand-written or typed words) reveal the writing process and the raw way of filming (fixed camera considering a single angle, live film in which the hesitations and lulls are not put aside) reveals an introspection specific to Godard’s cinema. In this search for what is ‘underneath’ there is an attempt to retrieve the primary language, as Deleuze wrote of the series ‘It is a question of being a foreigner in one’s own language’ (Lanavère 1998)

In The Geopolitical Aesthetic Jameson suggests it’s possible to read Godard as post-modern as well as from the more traditional perspective that he constitutes the high watermark of modernism.

What then becomes interesting is our own fundamental and indispensable decision, faced with these Gestalt objects, as to whether we prefer to read and to re-form them in a modernist or a postmodernist spirit. Everything turns, then, on whether the film is coherent in some modernist (if not traditional) sense, or whether it is not precisely some new kind of incoherence which the spectator relishes and which therefore constitutes a kind of postmodern jouissance, a reveling in loose ends, the desire called chaos or contingency. (Jameson 1995: 164)

The depth of Godard’s project might give it a greater utility than either interpretation still. It is the reflexivity & language building intrinsic to his work that from an information design perspective makes it transcendent of such categories and worthy of further study. Its insistence on the possibility of real communication suggests Godard’s work might find more affinity with contemporary philosophy’s speculative realists. A yearning for communication beyond the limits of its own form is uniquely relevant in the current global context.
Image decompositions

In *France/tour*, I had discovered an intuition ... We used slow motion and rhythm changes, what I prefer to call decompositions, employing the combined techniques of video and television. I had a little boy and a little girl at my disposal, and we did speed changes, semi-slowed down, semi-accelerated, semi-rhythmic, with loads of different possibilities. As soon as you stop one of 25 images ... you realise that a shot you've filmed, depending on how you stop it, suddenly there are thousands of possibilities. All the possible permutations between these 25 images represent thousands of possibilities. I concluded that when you change the rhythms, and analyse a woman's movements, even movements as simple as buying a loaf of bread for instance, you realise that there are loads of different worlds inside the woman's movement ... even when she was doing extremely banal things, you'd go suddenly from profound anguish to joy a split second later. They were real monsters. And I, in my guise as a scientist who knows certain theories, had the impression that they were particles and different worlds, galaxies that were different each time and between which you moved via a series of explosions. (Witt 2004: 201)

There is another form of resistance: that of the breathtaking beauty, vivid colours, and dense plasticity of the electronic imagery. Stripped of sound and extracted from the material in which they are couched, the 19 altered motion sequences that punctuate and complicate the smooth flow of *France/tour* constitute enormously potent self-contained, self-reflexive visual essays or etudes on the intertwined themes of human and audio-visual movement. Rooted in social theory, they veer rapidly and irreversibly into the sublime. The revelation of opera in the gestures of the waitresses in the fourth movement, or the celebration of colour in the free-jazz sketch of the children at play in the sixth, both point towards the invention of a unique form of animated painting rather than conventional television. The altered motion sequences carry within them the seeds of cinematic recomposition.

Videographic intervention in television's planned flow leaves a trail of novel video inflected forms. Together, they provide the basis for a revitalised mode of *mise en scene*, performance, and cinematic composition that will allow Mieville and Godard to recompose differently in images and sounds in the 1980s. (Witt 2004: 212)

A voice-over asserts: "A gaze is never profound. What's profound is the extent, the extent of a certain relation between the unknown and the known. Thinking. Bringing together in order to think. Simply bringing two images together. Two images that are simple because they show people who are simple, but who set into motion something complex because they dare to rebel. Yes, to begin to
think as you look."

From a graphical point of view, a version of the aesthetic of ‘recomposition’ described by Witt has been adopted in the final practice project, OM. Although the imagery and audio in the piece, and therefore the themes contained in the material are provided by its users, its architecture is intended to be Godardian. The flow of televisual data, unthinkingly remediated in many interactive media experiences, is interrupted by the OM system. As a consequence of the systems inability of the to fade or mix, the user is confronted with the more problematic mask and cut. As a consequence of the systems inability to save or output ‘finished’ sequences, the user is forced to dwell in the temporal dimension of editing or composing without resolution.

**Grids and Text – Numero Deux**

Figure (Extract/Text/Chart/Diagram/image etc.) has been removed due to Copyright restrictions

Jean Luc Godard Numero Deux 1975

The above images from Numero Deux show crops & divisions of the screen space that are one element of an audiovisual language that can be transferred to interactive spaces. The interfaces the sonimage films have inspired are attempting to move from a symbolic to an indexical mode. What is driving the practice is the desire to design a compositional field, a configuration space for images, sounds & texts.

Why? What is one to do? All of Godard’s work during this period asks these kinds of questions. And video, which he discovers and appropriates at this time, appears to him the only possibility of fighting back in kind, that is, responding in images and sounds to the set of questions that address why we no longer know how to communicate, speak, see, and think, and how we can still try to
speak and create with images and sounds. The electronic tool is the very instrument that allows Godard to formulate this double questioning, and to propose some hypotheses.

It is, finally, the use of the screen as a page or a painting: a site for writing live, for inscribing messages the spectator can not only read but see, see them make and unmake themselves by a touch on a keyboard, transform, repeat, short-circuit themselves, in real time, like an electronic message ("a film between the active and the passive, between the actor and the spectator," says one of the inscriptions in Ici et ailleurs). (Dubois 1992: 174)

Attention Economy

Jean-Luc Godard famously stated that viewers should be paid to watch TV, as the medium exists not to make programs, but rather to make viewers.

“In giving his or her attention to an object, the spectator modifies both him or herself and it, thereby producing and reproducing the ever developing infrastructure of the status quo.” (Beller 2006: 117)

Beller shows that this circuit is reinforced in contemporary media. With page views [ad revenue] driving the digital economy, it becomes clearer that its users who are paying for the information revolution in the form of their immaterial labour, in a rhetorically “participatory” model.

Films and music videos, like other media works, are machines for generating affect, and for capitalizing upon, or extracting value from, this affect. As such, they are not ideological superstructures, as an older sort of Marxist criticism would have it. Rather, they lie at the very heart of social production, circulation, and distribution. They generate subjectivity, and they play a crucial role in the valorization of capital. (Shaviro 2010: 2)

If a large part of this praxis is concerned with designing out the production of affect from a moving image architecture, or more precisely to implicate users as editors of affect, rather than its consumers, then how might the interaction designer go about this task? The final project, Open Montage was designed to position its users as contributors and editors of a compositional space within which the structuring of moving and still images alongside sounds and texts could be explored. In doing so, it draws on the aesthetic and formal properties of late Godard, a period during which his work becomes explicitly concerned with compositional processes & a painterly approach to image creation and juxtaposition. The films and television programs were realized using relatively primitive video mixers and text generators, in contrast to contemporary post production techniques tendency
to deliver technically perfect composites.

**The composite & duration**

The decomposition of the composite reveals to us two types of multiplicity. One is represented by space ... It is a multiplicity of exteriority, of simultaneity, of juxtaposition, of order, of quantitative differentiation, of difference of degree; it is a numerical multiplicity, discontinuous and actual. The other type of multiplicity appears in pure duration. It is an internal multiplicity of succession, of fusion, of organization, of heterogeneity, of qualitative discrimination, or of difference in kind; it is a virtual and continuous multiplicity that cannot be reduced to numbers. (Deleuze 1988: 38)
The following are a series of images from the final project OM, made partially in response to Godard’s montage work.
In the following passage, Streuyl analyses the way in which Godard and Mieville’s moving image work interrogates the language of cinema in a way that is deconstructive of linear montage. They wish to remind the viewer that there is no logical or natural flow of images. Rather, edited images become visible as constituent parts, each of which can be interrupted, pulled apart and examined. The concept of concatenation is important here, for it is by recognizing that moving image presentations are strings of potential other images, other sequences, words and sounds, that the cinema project of Godard becomes a useful model for interactive media systems. It is no less than the demarcation of a space of image assembly. The O.M. project is designed to be such a space, within which the user can construct refrains.

Godard and Mieville translate the temporal arrangement of the film images into a spatial arrangement. It becomes evident that chains of pictures do not run one after the other, but rather are shown at the same time. They place the pictures next to one another and shift the focus of attention onto their framing. What is revealed is the principle of their concatenation. What appears in the montage as an often invisible addition is problematized in this way and set in relation to the logic of machine production. This reflection on the chain of production of pictures and sounds in this sequence makes it possible to think about the conditions of representation in film in general. The montage is the result of an industrial system of pictures and sounds, whose concatenation is organized from the start.

Godard and Mieville ask: How do the pictures hang on the chain? How are they chained together? What organizes their articulation and what kinds of political significance are generated in this way? (Streuyl 2012: 86)
Open Montage prototype 2011-13

Concept and Design: James Moore

Programming: Alcwyn Parker

The final project produced in the context of this research project is O.M. [open montage]

1 media ecology
2 the rgb splitter
3 IMAGE the video & image composition grid
4 AUDIO the audio compositor
5 TEXT the typographic editor

Please note that the text and the DVD document 2 iterations of this project. The first, from 2011 is documented through the images in this document and has been retained as it offers a clear explanation of the functions of the various screens in the 3 screen assembly.

The second iteration of the project, from 2013 is shown in the material on the DVD. In this version all 3 screens occupy the same space, they are projected into each other. The two versions of the piece are functionally identical.

Project objectives:

But do we ever think true duration? Here again a direct taking possession is necessary. It is no use trying to approach duration: we must install ourselves within it straight away. This is what the intellect generally refuses to do, accustomed as it is to think the moving by means of the unmovable. (Bergson 1998: 300)
Bergson pitted experience against representation. Lived experience, Bergsonian duration, collides with representation in ‘the edit’. One of the objectives of the open montage project was to try and forestall the closure of a finished edit; to insert the user of the system / the editor at a phase which would be conventionally be thought of in terms of a kind of post production. However, the project suspends the process there; users can only dwell in that space and continue to iteratively make changes to material which cannot be saved or output. Its affect is only operative in real time.

It’s not that the final task of deconstruction is to surpass all oppositions, because they are structurally necessary to produce sense. They simply cannot be suspended once and for all. But this doesn’t mean that they don’t need to be analyzed and criticized in all their manifestations; showing the way these oppositions, both logical and axiological, are at work in all discourses so that they be able to produce meaning and values.

When I say that this phase is necessary, the word phase is perhaps not the most rigorous one. It is not a question of a chronological phase, a given moment, or a page that one day simply will be turned, in order to go on to other things. The necessity of this phase is structural; it is the necessity of an interminable analysis: the hierarchy of dual oppositions always reestablishes itself. (Derrida 1981: 42)

If things [des choses] are not describable then they remain an image or a configuration of images.

The Godardian grid [the sonimage period is dominated by formal grids / basic typographic layout] is re-inserting the operator’s consciousness around composition / juxtaposition.

O.M. [open montage] allows users to recursively layer moving and still images/sounds/texts inside carousel-like structures in continuous dialogue with one another. In terms of an interface metaphor, this is conceptually similar to a loop of film. However, here the user can access a series of frames in the loop and make mixed media annotations on that frame, which then have their own duration. It is as if the moving image sequence was stored in a carousel slide projector cartridge. The user can stop the flow of the sequence, pull out a slide and begin to work on that frame, then place it back in
sequence and the annotations placed on that frame smear across subsequent frames, according to a duration that the user determines by a process of drawing.

These additional layers, which are designed to operate as metadata, traditionally behind or invisible but here on the surface, can be attached to particular frames, thus disrupting the traditional movement dynamic of linear image sequences. The image system is designed to evolve in what might be termed asymmetrical sequence; the image field begins to depart from linear ‘sequence’ into a non-causal complexity. No individual image persists that is not part of a larger whole.

The user, through a series of these iterative assemblies is able to loop back through a sequential image and amend / annotate it with further images, sounds, texts, thus generating an image field with multiple attributes. The emergent montage herein is thus both contingent, distributed and temporary in terms of its formal outcomes.

This project began with the assertion that moving image presentations in linear time are surface models of reality lacking depth. An expanded notion of depth of field would not concern itself simply with the surface of the image, using cinematic technique to ensure the viewer read the image in a particular way, but rather use the surface of the image as an index of possibilities that flow from it, and could be added to that image by the user, then by successive other users. In Beller’s phrase, there now exists an attention economy, and users are familiar with this economy in relation to immaterial labour; our clicks online generating money for others. Godard argued many years earlier that viewers should be paid to watch TV, since their implied user status was the determining structure underpinning the programme commissioning process.

This project suggests a design strategy for using the image rather than the media-entertainment circuit in which the viewer is figured as consumer in a passive relationship. This could offer a more
purposeful and active model for the functional aspect of the moving image; foregrounding its directly communicative aspect and providing a visual index through which interpretations may flow.

As with many of the projects discussed here, connections to past practice are often discovered subsequent to actually making the work. In this case, it has been interesting to reflect on the work of Robert Breer, in particular his films consisting of hand drawn cards in a sequence and his rolodex style sculptures.

The software last clock, Jussi Ängeslevä 2002 which since being designed as a gallery piece is now also an ipad app, works with the display of duration in an interesting way, at least in a visual sense.

'Last' is like a familiar analogue clock, it has second hand, a minute hand and an hour hand. The hands are arranged as concentric circles, the outermost being seconds, the middle one minutes, and the innermost hours The major difference to a regular clock is that the hands of last are made from live video feed and as they rotate round the face of the clock they leave a trace of what has been happening in front of the camera.

Thus, the clock face displays the last minute, last hour and last 12 hours as it's history. The video feed can be any live video source: A camera mounted on the clock itself looking at what is happening in front of it, a remote camera streamed over the internet or TV signal fed directly to the clock. The clock can thus display the local space, remote space or media space respectively.

As a clock, the emerging imagery becomes contextualised and makes it meaningful in the space it is being displayed at. As an installation, the system can be used as a living, aesthetic element reacting to the usage of the space. (Ängeslevä 2002)
Design Process

The final practice outcome from this research process is a software artwork. At the time of writing it has been created as an air application, with the intention that it be situated in a particular location for users to interact with in a serial manner. As such an app it also has the potential to be installed on a range of devices, both portable, tablet or large screen. In its current form the system allows a user to construct montages which then exist as a particular iteration to be edited or annotated by the subsequent user (rather like a series of edits to a wikki page). The piece however establishes a mode of operation that can be further developed into versions that would support real time collaborative use over networks. Version 1 of the piece is a 3 screen architecture, enabling users to operate at all ‘levels’ of the work simultaneously. This was designed to encourage the perception that traditionally discrete modes of action in moving image production i.e. planning / editing / compositing / viewing are now co-present to attempt a more relational and less hierarchical ontology.
[Images of 3 screen layout] Screen 1 Ecology/Planning - Screen 2 editor - Screen 3 viewer
O.M. Glossary

Because the project departs from some traditional aspects of digital video and it is necessary to define some of the terms in this section.

Array - The divided video material has 100 edit points [not actually corresponding to frames in 24/25fps] These available edit points are displayed in an array of frame type thumbnails.

Cycles - This is the name given to the aggregated images / sounds / texts. They are not ‘films’ and not quite ‘loops’ either [although they are similar] as they are constantly changing rather than simply repeating.

Edits – An edit refers to any selecting / transforming operation of the user within the image / audio / typographic edit mode and not simply video editing.

This chapter describes the process of designing the software as an attempt to resolve some of the design problems arising from the positions outlined in the earlier sections. Among these are:

1. Conscious compositing

The objective here is that the user in such a system becomes conscious of their role in the production of images [usually by proxy as an assumed user] and takes an active role in constructing compositions from component parts which they provide and or attribute. A key design consideration is therefore the means by which the interface might intensify the sense of agency in the user; foregrounding their own subjectivity as viewer being altered - becoming active as a developer/collaborator. After a series of formal experiments it was decided that this could be achieved through a grid system that allows the user to arrange video and still images within relatively constraining parameters. This assists in denaturalising representation, composition and ‘the frame’
among users of the system. In other words, without the fixity of the grid, users may habitually engage in a compositional aesthetic that privileges particular formal relationships within the frame and time. The brutality of the grid layout, in which only fairly crude compositing is possible [on/off states in block formation] makes it impossible for users to become too deeply invested in compositional subtlety. They can only do so within strict parameters, which brings clarity to decision making. Aesthetically, in terms of position, colour, tone or time operations, the tools are quite basic. The ‘crudeness’ of the compositional tools re-emphasises the importance of the selection of material itself, the boldness required of the user [in regard to context and juxtaposition] is intended to mediate against the tendency towards a reflexive impotence among users faced with a kaleidoscopic range of options in interactive systems such as video editing / compositing software packages.

Technical Notes

The compositor is written in ActionScript3 for the Adobe AIR runtime environment. This allows flash to run natively on many different platforms from desktops to portable devices. Although the majority of the code is original to the project, some of the motion effects lean on the functionality of the industry standard GreenSock tweening library. Any file conversions and encoding is handled by the C library FFmpeg which is capable of creating video files in many different formats from many different sources. Because this library is written in C it is also extremely portable.

The overall compositor was achieved by combining an amalgamation of conceptual ActionScript experiments. Modular steps were taken to develop the project. Each feature or concept was coded as a separate application. Once they were complete, the separate applications were encapsulated within a component library and added to the code for the main project. This type of plug and play development will allow for a more future proof application. Each component can be modified and improved without affecting the rest of the main application.
The 3 screen installation documented in the video was achieved using a piece of hardware called the Matrox triple head. The Matrox triple head takes the maximum resolution of the host computer and divides it into three. It then outputs the result to three separate VGA/DVI devices. In the case of the compositor, 3 projectors were used to output the display. It was vital for the overall aesthetic that each projector performed consistently. Using a Mac Book Pro 3.06Ghz Intel Core 2 Duo with 4GB of ram the compositor ran comfortably with a resolution on each display of 800x600.

Detail of file browser [left screen] Shows still images from source folder [user generated content] & audio as waveforms which can be previewed on rollover.

Composition grid [centre screen] & part of viewer
Repeated cycles of interaction are encouraged by the system’s tendency to provide rapid feedback from a particular action. The intention is that a processual creativity is encouraged through such rapid feedback. Changes to the image grid are instantly incorporated into the composition, revealing an emergent montage ‘in becoming’.
2. Time vs duration or timeline vs notation

The project explores the potential for notation as a control system determining duration. Departing from the timeline, the system allows users to determine the duration of an edit by sketching a shape, the drawing of a line punctuated by intermittent dots. After creating a composite layer the user must draw a line shape on screen and the number of dots indicate how many subsequent frames will be affected by the layer they have edited.

![Drawing time / duration](image1)

![Media ecology shows pre-existing cycles](image2)

3. Open montage

The system has been created in such a way that the montage process is continual, and ideas of editing towards a fixed outcome are suspended. There is no mode of playback of a finished piece in the software, rather a 3 screen component structure shows the construction process and the ecology of material being used in a continual dialogue with the full screen ‘display’ of the moving material.

Screen 1 – Media Ecology

Note: The application imports video material and re-encodes it; splitting it into individual frames, which can then be annotated with additional images, sounds and typography.
a. Files
The ecology is the entry point to the system where video files in the source folder can be seen in relation to one another. Files are viewable in a small thumbnail form, with cycles that are being used intensively or now/recently appearing in the foreground and larger in pixel dimensions than those which are relatively idle. The ecology has the capacity to show connections between the actions of particular users using hairline graphics, so that cycles can be related to other cycles.

b. Array
When a cycle is selected the image sequence splits into an array of frame edit points, which appear on screen in a cascade formation. From here the user can click on the point in the cycle where they wish to make an edit. At this point the media editor appears simultaneously on another screen and the user may begin working.

Screen 2 – Media Editor. This is where cycles are edited.

a. Image annotation.
Early development of image editor, implementing grid selection tool

b. Typographic editor

The Typographic editor allows users to annotate images within the screen using a series of moveable grids that snap to preset positions within the larger grid. Once again the control over fine detailing is minimal, no control over typeface or colour is possible. The user simply controls what is written and where / when it appears.

![Typographic editor](image.png)

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a. Audio composition

The audio functionality is very simple; the user simply selects an audio file to begin playing at a particular edit point and the audio will playback during the cycle for its full duration, until the cycle returns to the edit point when it will play again.
Screen 3 - Viewer

The interface is always ‘paused’ and always ‘playing’ at the same time, yet its neither conventionally playing nor paused. The user is invited to enter another phase-space where the process of the articulation of meaning, communication being designed, is being suspended in order that the user dwell in that space.
Critical response no. 9

Throughout the Planetary Collegium research process, researchers in the group participate in ten-day research composite sessions where they discuss their project with colleagues. The critical response text below concluded my last session with the group in Sao Paolo 2006.

I was asked about the paradox of the unfolding of time in an image sequence and the ‘real time’ of the user interventions and how these could be reconciled. In my view this question precisely identifies one of the needs for a re-examination of the moving image in the context of interaction. Currently it is not possible to think of the moving image outside of either this playback (watching) mode or a producing mode of editing or shooting video. So we are either making something or watching something. I am trying to propose an in-between state, and that the moving image inside of real-time communication is already conceptually in this kind of position but there is a lack of tools to be able to understand this or do anything about it.

Some clarity needs to be brought to the term ‘consumption’. I was probably using the wrong word; however, I was referring to a process where images are commissioned by an industry with an end-user (consumer) in mind and a series of assumptions are made about who the end-user is and what they might want or use images for. Godard in his TV period was trying to establish another model, more like a cottage industry, one where the end-user could approach him as someone who makes films, and request a film be made on a certain topic. This has more in common with the current situation where producers and users become responsible for what they are either making themselves or viewing/downloading as it is all engendered in a situation and spirit of purposefulness.

I agree with one of the questioners that this rise of user-generated content is expelling story from the moving image and replacing it with something more direct like witnessing, deposition, positioning oneself. The question is how will this new tendency be framed/used. The question of devices is also an interesting one as they absolutely highlight the foregrounding of a relationship
between participants around and through material where the visual material becomes arguably less important – it has little traditional quality or duration as moving-image material but has more potential to connect its users more profoundly than cinema can? This means that in the question of venues where this may occur the venue is not a specific building: cinema, theatre or living room but the data space at large.

This was picked up in another question concerning how much the project is actually looking at the conversation between users rather than the form of the material – the answer to which is absolutely yes, the project is not about technology, but possible relations between people, in this way the political dimension is established as integral. In answer to the question concerning Virilio, it is simply reflecting on his statement that consciousness emerges from montage and that the potentially different conditions of montage present in the combination of real-time data and multi-users may produce an unstable, contingent montage that needs examining.

With the collapse of neoliberalism – and make no mistake about it, neoliberalism has collapsed, even though it continues to dominate political culture because of undead inertia – I expect to see capitalist realism under increasing pressure. A thirty year old reality system has just collapsed, and we’re in a kind of reality interregnum. It took a few years after the 1929 crash for new political forces to emerge, and just because nothing much has happened yet doesn’t mean it won’t ever happen. The terrain is strewn of ideological rubble, and it’s there to be fought over. (Fisher 2010)
Reflection

In a world in which we are entertained from cradle to grave whether we like it or not, the ability to rework image and dialogue, light and sound, may be the key to psychic and political health. (MacCabe 2003: 301)

Reflecting on the research questions that initiated this project, and the critical perspectives on other theory & practice that informed those questions is chastening. The projects and models have only scratched the surface of what is possible and arguably needed in terms of a transformation in our relationship with the moving image as users of interactive systems. The perception of a moving image system that does not finally resolve itself into something to watch is still a confused one, counter intuitive and thus a hard sell for many users.

The dominant mode of thought around moving image media still regards it as an entertainment control system defined by its industrial parameters. In this authors experience examining & interviewing 100 applicants to study digital media at degree level in England over the last 3 years, a persistent idea continually re-asserts itself, that this generation frequently regard the manufacture of media images, sounds & texts as an informational / entertainment circuit in which they aspire to take a position of authorial power. They see media as a powerful force in shaping public opinion & in regard to “mass media manufacture” [Guattari] they wish to be part of that system.

Despite this observation the goal of designing systems that engage the user, to encourage a dialogic moving image creation / communication practice of everyday life remains. This non-movie mode of address will continue to be prototyped. The technical challenges in designing projects of this nature and making them meaningfully functional are many. However, the development tools for doing so are becoming more accessible & easier for non-developers [in the traditional sense of computer programmers] to use. If a key issue is to attempt to interrupt such an entertainment circuit with alternative modes of moving image use, then a future area of attention will be designing systems
targeted at younger users i.e. children. This would be a partial return to the work I was doing at postgraduate level and subsequently, designing hybrid systems which blurred the distinction between game, software & artwork.

The technological & cultural changes in the *digital world* during this project have been enormous, I started thinking about this research pre - “social media” as we now know it, yet the questions still feel as important and difficult to answer with practice. There are today many software tools, development frameworks, portable devices, camera technologies & opportunities for distribution that did not exist a few years ago, these will make future developments in this field tangibly easier.

(The) prosumer finds his/her first incarnation as a spectator, who produces and reproduces him/herself by exercising the “freedom reflex,” desire, intention, the unconscious, what-have-you, while valorizing the media pathways; s/he produces value for capital through attention - both as a commodity that is bought and sold in advertising, is speculated on via the promotional budgets of blockbusters, and as a medium that remakes, reconfigures various corporeal-mental-chemical structures that allow him or her to go back to work in a situation of hyper-flexible accumulation. Deleuze called this arrangement “desiring-production” but I have endeavored to give these assemblages a strict economic meaning that accompanies its other personal, cultural, collective significances. Clearly then, if the spectator works and cinema brings the industrial revolution to the eye, not only has the situation of production been transformed because the form of labor has undergone a profound modification in its interface with technology, but in the dialectics of visibility and invisibility the commodity form itself has also been altered and with it, the form of value. (Beller 2006: 293)

Beller’s description above [which might form the basis of a new contract between image, interface & viewer] necessitates that an informed, critical design perspective be brought to bear on the task of constructing new [post-cinematic] systems of image assembly.

The final piece of practice in this research project, O.M. was designed to try & make such a transfer of responsibility for meaning much clearer to a user. Not with the intention of creating a new text which would bestow status on those who could understand it, but to furnish the user with a tool enabling them to play the only game of any real interest, defining reality for ourselves.

In *No More Beautiful Soul*, Timothy Morton writes powerfully of the need for a perspectival shift
towards a culture of responsibility for the images we see.

Beautiful Soul Syndrome ... sees consumer objects, and consumerisms (the various styles), as so many reified things 'over yonder', from which it distances itself with disdain. How do we truly exit from the Beautiful Soul? By taking responsibility for our attitude, for our gaze.

The only way out of the problem is further in: jumping into our hypocrisy rather than pretending to be disillusioned and beyond ideology, without attitudes. This is a test case for our ability to progress in social collectivity. It means dropping various supporting concepts that provide the background against which regular thinking takes place: nature, environment, world, life.

Environmental awareness is, finally, a sense of irony, because it is through irony that we realize that we might be wrong, that identity might not be as solid as we think, that our own gaze might be the evil that we see. (Morton 2010: 223)
Notes Towards future research & the problem of expressivity

As the volume of communication we engage in daily is amplified by computational systems, the use of audio/visual montage [in any nuanced or complex manner] seems to be decreasing in their design. Popular social networks such as Facebook, Twitter, as well as “smartphone” operating systems are aesthetically primitive, appearing to return their users to a form of communication largely dependent on the written word. In terms of capacity for expressivity, the experience of participating in such networks does not seem to have evolved much beyond the design paradigm of the chat room or bulletin board.

At the other end of the graphical spectrum, the so-called worlds of Second Life, or those enabled by next generation VR like gaming headsets such as Oculus Rift continue along the design quest for total immersion, potentially at the expense of qualities such as criticality / distance.

There is a language of non-verbal, mixed media visual communication for collaborative environments still underdeveloped, & a reimagined moving image, configured for real time networks can play a role in the design of such a language.

We do not lack communication. On the contrary, we have too much of it. We lack creation. We lack resistance to the present. (Deleuze and Guattari, 1994: 108)

Allowing the communicative parameters of cyberspace to be narrowly defined by products such as the aforementioned social networks might result in the poetic, symbolic or other imaginative dimension of visual communication in interactive systems being undeveloped.

In a sense, computer users are continually engaged in a kind of montage making process, within computational environments and mobile operating systems. These devices are not only multimedia environments in terms of the file types they support within a graphical user interface that the user,
to an extent, control; they also function as image making & audio recording tools. That being the case, what is at issue in terms of moving image articulated montage, is that these devices communicative montage qualities are heavily prescribed by the OS and applications to which the device user subscribes. Images & sounds are contained within predetermined functional parameters; in Flickr and Instagram for example images are configured as ‘pictures’ to be attached to text driven communication. Video files on the youtube platform exist to be watched in the traditional sense and to be interacted with as a text discourse aside from the moving image material itself. Neither option configures the moving image itself as a communicative field.
Montage as a practice of everyday life?

I am interested in how the research thus far presented here might in the future shift to mobile and distributed environments and away from large screens and the carefully controlled spectatorship of screenings or galleries. The simplistic layout and markup capabilities of the final piece O.M. hint at how the integration of montage techniques with mobile devices could be achieved.

Another area that the research intends to explore in future is the use of developmental montage in interactive learning systems, including those designed for children. The techniques of physical computing demonstrated through the tangible interface projects being designed on the BA which I organise might also be utilised in such a context, to design visual language building tools. Such systems could provide an alternative to habit forming computer applications which narrow expectations for users ability to fully communicate & influence the world around them.

Having the opportunity to reflect on these pieces some time after their completion re-focuses the ongoing design project around the proposition of *montage as a practice of everyday life*. For this to become the case, such montage would probably need to be taking place via the devices and in the environments of everyday communication. Indeed this may be the only place in which such an idea would have any use.
Conclusion - The afterlife of the cinema

“The life or the afterlife of the cinema depends on its internal struggle with informatics”
(Deleuze 1989: 259)

The present moment of the potential time image based “whole audio-video system” envisaged by Deleuze & others colliding head on with real time, multi user & distributed authorship systems affords the possibility to model a re-imagined interactive “whole audio-video system” along deconstructive lines. Much of the Future Cinema field is still concerned with the aesthetics of the image. What appears necessary is for the moving image to develop (within interaction) an attendant interrogating language of contextual image/sound/text annotation. This should not be imagined as a new kaleidoscopic range of visual and audible effects, (see expanded cinema period) rather a more profound shifting of emphasis, a foregrounding of what was previously hidden.

Such a moving image notational system enables any media type such as image sound or text to be annotated by any other media type by a particular user at a particular time. These annotations form additional layers not dissimilar to meta-data that are attached to any piece of ‘content’ in the system. However, instead of the usual sense of meta-data being behind something more important, namely content the so called meta-data will be foregrounded, assuming a role just as important as the initial seed element and having an equal aesthetic value.

The changes to this material are therefore not envisaged as some kind of visual metamorphosis but rather a coherent and traceable field of attributes and associations provided by users of the system who take on a responsible role in the media field in which they are participants. This flow of interactions and relationships will be archived and it will therefore be possible to trace the emergence of changes in perception in relation to particular material. Such a “total image system” although previously theorised as a utopian cinema project has lacked the essential component that is provided by the dynamic interactions of users, without which it remains an artistic strategy rather
than a living system.

If, to paraphrase Virillio consciousness emerges from montage, then the changed conditions of montage emerging in on-line environments need to be examined. The shift in emphasis occurring within so-called 'open' participatory systems where issues of the source, addressee, context and meaning of communication vis-à-vis images are foregrounded as never before affords the opportunity to expand the theory of montage currently existing within cinema. Until now montage has been the form language that is the expression of a larger 'auter' control theory. Contrary to this dominant model, in the systems I have been designing, layering of images sounds and texts are not present to re-enforce one another, rather the separation of these elements, and the responsibility of users in providing, attributing and linking them produces an emergent montage, which is contingent, unstable and transient, rather than fixed and finite.

The research argues this is achieved, and can be further developed by the feedback of responses into the image-system, in this way the image-system begins to exist not as a form with a related theory and critique existing outside of itself. The image-system is rather becoming an emergent ecology, tracing a situation of incompleteness, transience and instability.

This project suggests some theorists & practitioners of so-called new media are erring in striving after greater levels of immersion in video based interactive systems, either through interactive narrative or notions of recombinant poetics that attempt to seduce the user. In seeking to re-imagine the expanded cinema project as database cinema, a kind of ambient opiate which seeks to retain the totalizing quality of the cinema experience takes hold of the design process. Critical design perspectives & meaningful participation are being overlooked in favour of surface aesthetics or appeals to consciousness altering in imprecise terms.
To attempt to adapt narrative film to interactive environments is clearly to miss an opportunity. A meaningfully interactive moving image culture requires that 'disbelief' should not be suspended but encouraged. To summarise, the research suggests that what Deleuze identifies as the totalizing tendency of the cinema is weakened when the moving image is embedded in real-time communication systems.

It is now possible to re-consider the usefulness of the moving image as part of a component language in interactive systems, in doing so this may bring the moving image back into contact with the radical cinema project of Godard and others.
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When interactive designers incorporate moving image material into web ‘pages’ the html tag used is ‘embed’, and apparently what is embedded is not just a digital file format but also 100 years of film (or more accurately movie) theory. Such theory rests on principles such as didactic montage, suspension of disbelief and among its well-known objectives are the surrender, immerscence and seduction of the audience.

The design principles of interactive systems, particularly those participatory data spaces emerging which are collectively referred to as ‘web 2’ are arguably in many ways theoretically opposite. These systems have the potential to nurture critical rather than passive user behaviour, often relying on the purposeful actions of users for their ‘content’ and therefore very existence.

Rather than being directed towards fixed and finite narratives and outcomes, on-line communities are often characterized by their incompleteness, transience and instability. Is the moving image then simply a relic of the last century, the ultimate site of an utter creation & control theory completely at odds with emerging culture, or otherwise how might the moving image be re-purposed for realtime communication contexts in a useful way. In doing so may a latent potential within the moving image be revealed and how might this be approached as a design problem?

Key Words;
participatory, systems, moving, image, real-time, communication
In the first issue of independent video / video art journal Radical Software published in 1970, the editorial reads thus. "Unless we design and implement alternative information structures which transcend and reconfigure the existing ones, other alternate systems and life styles will be no more than products of the existing process". 1

This, in common with many other strategies of the era, considered that the polarities of producer and consumer in relation to moving image media needed to be reversed. At around the same time Jean Luc Godard and Anne Marie Mieville established SonImage, having retreated from commercial film making, and seeking to theorise and enact a different model of production & distribution for the moving image, opposed to a binary communications theory of sender, receiver, message and channel. "There is no message independent of the relation between sender and receiver and that relation is not understood in terms of some neutral channel but rather as a complex which cannot be analysed into separate components." 2

35 years on may we consider that in this age of Wiki editing structures, mass blogging, MySpace, and emerging rich media publishing communities such as flickr and YouTube, utopia has been achieved? What is the nature and function of these 'communities' proliferating across the net, and who benefits from them?

Notes; 1 Editorial Radical Software Issue 1The Alternate Television Movement Spring 1970
2 JLG in Godard Images Sounds Politics McCabe BFI 1980
'Broadcast standards' have broken down, the once standardised forms of television & cinema are fragmenting into video on mobile phones, pda’s, ipods & games consoles, technologies not constrained by film language & theory. Above all, 'interactivity' itself raises fundamental questions for art forms and industries heavily invested in the outer theory of creation. Do these developments finally signal the beginning of the revolution in film dreamt of by pioneers of underground & avantgarde cinema in the late sixties and early seventies? Technologies such as 'Interactive TV', were it ever to exist, seem to hold rich potential. How might a conversational mode of interactive television be theorised & ultimately developed?

Abstract | Consciousness Reframed ‘Qi and Complexity’
The Wooster Group VS Usability

The imposition of narrative schema in western culture is used to frame, selectively edit and explain complex experience, to reduce it down to 'usable' stories / histories. The ‘usability’ imperative in computing leads to the imposition of a narrative system on operating environments. At a software design level, and within artworks, interactive systems deal with complexity, or the infinite potential of what a computational space could be by reducing it down to 'usable' parameters. What is considered useful in computing is determined by industrially designed 'purpose'.

Artists who are operating in the computer medium seek to embody more abstract, poetic, complex and non-narrative qualities in the experience of interaction with art systems. If this sometimes goes against the conventions of an already engrained set of usability ‘norms’, this can be problematic for users. For instance, when we come across a web site that does not function in the usual manner, we can become very irritated & angry.
My research in part concerns artists of the pre-digital era that sought alternatives to classical narrative, as a case in point in this paper I will examine the work of the Wooster Group, a theatre company under the direction of Elizabeth LeCompte that emerged in New York in the 1970’s. Their performances resist easy explanation, but were often characterised by a dense layering of both source material, and technology used to realize the experience. “The Wooster Group... have found a way for theatre to reflect not so much modern issues as the actual experience of being alive in the modern world” [The Observer]

If we were to apply a standard of usability to their work, as with that of many other artists, HCI experts would probably conclude that their work fails, is incomprehensible to the user, needs simplifying. Other artists I will refer to sought to explore territory that took them outside of western philosophical & cultural narratives, often employing anti-narrative strategies of chance and indeterminacy. This placed them in much closer contact with eastern culture and philosophical thought than with the grand narrative of western art. Pianist Steffen Schleiermacher, referring to Cage’s “music of changes” puts it thus: “Cage employed the I Ching as a little chance computer.”

A strand of politically engaged practice that runs through Brecht to The Wooster Group via Duchamp, Cage & Cunningham, Beuys, Godard and others presents a powerful and viable alternative model for the development of alternative ‘usability’ paradigms, especially in relation to emerging forms such as interactive television.
This article is concerned with the design of an undergraduate interactive media project within a traditionally broadcast media-teaching environment. As such our first concern was to reframe the previous unit title *Genre and Audience*, now *Systems and Users*. This renaming is indicative of the shift we sought to articulate. The intention was to move away from representation [the production of media artifacts] towards the design of participatory architectures, undermining the fixity of the sign and embracing the metaphors of relational complexity offered by ecological systems.

The crucial question behind such a shift in pedagogy was whether teaching traditional Broadcast genres and their relationship to audiences tends to reinforce a subject/object binary incompatible with urgent imperatives brought about by ecological/geo-political narratives of collapse. The unit was designed to strategise alternative understandings to those afforded by linear media [pictorial/narrative/sonic]. As a starting point we took Heidegger’s argument that representation constructs its objects (in this case the environment) as a commodity for human consumption.

The unit took as its core reading Felix Guattari’s “The Three Ecologies” which extends the notion of ecology beyond the environment to an ecology of the mind and an ecology of the social. Guattari calls for the production of new subjectivities in these domains, identifying the “mass media” as infantalising and instrumental in environmental and social degradation. The project design questioned whether the throughputs of “network culture’ might allow new subjectivities which are relational, [rather than objectifying] interactive & co-dependent to emerge – multiple & simultaneous subjectivities operating as components in a design ecology.
Teaching methods

We review the method of integrating theory & practice [praxis] as a pedagogy applicable to 1st year undergraduates. We detail the range of student experiences [walking, debating, designing] students encountered when asked to answer the research question ‘what is the mineral tramway and how do we know it?’ The tramway is a post-industrial zone where the toxicity of mine tailings is a substrate to imaginings of heritage & tourist simulacra. Students new to the area had their impressions of Cornwall, (a globally popular tourist destination) challenged when asked to directly sense the ground beneath their feet rather than resort to conventional narrative and representation. The design brief placed a series of obstructions in their path such as; no dialogue; no characters; no music. Replacing the habitual reliance on video & audio, students were asked to use vibration, wind, thermal and motion sensors, generating environmentally captured & historical data sets.

The arguments put forward by Guattari were also not to be taken at face value. Instead the text was debated and evaluated through a series of student led presentations [hub seminars]. Reading and presenting theory alongside project production allowed the students some critical distance in regard of their own subjectivities in relation to consumerism, broadcast media, heritage and tourism. The article documents 4 case study projects that employed techniques / technologies such as arduino, processing, augmented reality, motion tracking, site specific installation and data visualization.

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University College Falmouth, U.K. Summer 2010.
Abstract

Recent developments in network culture suggest a weakening of hierarchical narratives of power and representation. Online technologies of distributed authorship appear to nurture a complex, speculative, contradictory and contingent realism. Yet there is a continuing deficit where the moving image is concerned, its very form appearing resistant to the dynamic throughputs and change models of real-time interaction. If the task is not to suspend but encourage disbelief as a condition in the user, how can this be approached as a design problem? In the attempt to build a series of design projects suggesting open architectures for the moving image, might a variety of (pre-digital) precursors from the worlds of theory, art, architecture and film offer the designer models for inspiration or adaptation.
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