D I S S I M U L A T I O N S

illusions of interactivity

Andy Cameron takes a peek at the end of the story

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    Narrative is present in myth, legend,
  fable, tale, novella, epic, history, tragedy,
   drama, comedy, mime, painting, stained glass
windows, cinema, comics, news items, conversation.
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Roland Barthes, 'The Structural Analysis of Narrative' (Image, Music, Text)

The form of the story permeates every aspect of our cultural life. History, politics, memories, even subjectivity, our sense of identity, all are representations in narrative form, signifiers chained together in temporal, spatial, and causal sequence. Narrative is a component of those deep structures with which we construct ourselves and our universe; true stories through which, in the manner of certain Aboriginal legends, the world is dreamed into existence. Narrative enjoys with language the status of a defining characteristic of humanity and its culture - **a people without stories** seems as absurd an idea as a people without language, (a people with language but no stories even stranger, for what is language for if not to tell stories?)

Over the past few years there has been a tremendous financial and emotional investment in the idea of digital media, the use of computers as the site of culture rather than just tools for business or science. This is partly due to the drive on the part of manufacturers to create new markets for their hardware after the business and science markets have become saturated. It also reflects the apparently inexorable progress of price/performance ratios in digital technology - only recently have cheap computers been capable of simulating analogue sound, images or moving pictures with sufficient verisimilitude. At the same time, there is a desire at work here, a fantasy which exceeds its technical and economic conditions. Implicit in the notion of digital media is the belief (read desire) that digital computers and digital communications will provide a unified site for 1st world culture in the near future and that this new medium will offer distinct advances over existing media, above all by offering its audience **interactivity.**

Interactivity refers to the possibility of an audience actively participating in the control of an artwork or representation. Until now, what we call culture doesn't allow for much interaction from the audience. The audience is given a space for interpretation and a space for reaction, but not of interaction. There are undoubtedly those who would argue that interpretation is interaction, and so, of course, it is, but not in the sense intended here. For the purposes of this discussion, interactivity means the ability to intervene in a meaningful way **within the**

representation itself, not to **read** it differently. Thus interactivity in music would mean the ability to change the sound, interactivity in painting to change colours, or make marks, interactivity in film the immersion of the spectator in the scene and the ability to change the way the movie comes out. This is both more than interpretation, and less. This discussion is an attempt to speculate on the **collision between a dominant cultural form - narrative**, and the **technology of interactivity.** There is a contradiction at the heart of the idea of the interactive narrative - **that narrative form appears fundamentally non-interactive.** The interactive story implies a form which is not that of narrative, within which the position, and authority of the narrator is dispersed among the readers, and in which the idea of cinema, or of literature, merges with that of the game, or of sport. The consequences may be far-reaching and profound. Can a simulator, or an interactive construct, usefully adopt a narrative form? Will there be a **general transformation from a culture of stories to a culture which expresses its truths through an immersive, interactive medium,** - the shared experience of the simulator?

Forking Paths and Synthetic Spaces

In the short story Garden of Forking Paths2 Borges imagines a novel in which the path of the story splits, where all things are conceivable, and all things take place. The author of this story within a story is judged insane and commits suicide, and Borges' narrator is arrested and condemned to death - thus the fate of the narrator and of the author in the interactive era is prefigured. It is not hard to see how the task of writing interactively might drive an author to insanity and suicide. To write not simply an account of what happened but a whole series of "what-ifs' increases both the volume and complexity of an author's task exponentially. And if the reader chooses his or her own pathway through the story then the narrator can be dispensed with - in effect the function and authority of the author is usurped by the reader.

Interactivity implies forking paths and each pathway must be written and fitted together. The greater the number of pathways, the greater the sense of textual play for the reader, and the greater the amount of work for the writer. The volume of story web increases exponentially with additional points of interaction. An author is faced with an inevitable and depressing tradeoff - sacrificing time spent on the texture of the narrative, its literary or cinematic qualities, for an enhanced interactive complexity. The result can be interactive but schematic, resembling the outline of a story rather than the story itself.

How much interactivity does it take to make an interactive story? We don't know because we don't know what an interactive story is like, nor what it is for (more on this in a moment). It is true that the number and complexity of forking paths could be increased until the reader experiences a large degree of freedom and control within the text. The limits of this freedom are achieved within a model that dispenses with the network of lines altogether, replacing it with a fictional space within which the reader can turn left or right, look up or look down, open a door, enter a room, at any time they choose - synthetic or virtual reality. In the VR model, although the reader/spectator enjoys seamless temporal and spatial freedom, the tradeoff between interactivity and richness of content holds true. VR to date has barely been able to dress the set, let alone cry 'action', or murmur 'once upon a time'.

If the sheer complexity of building an interactive narrative is problematic at the conceptual and technical level, there is another simpler and deeper problem. This is the question of what kind of representation an interactive representation is, if you like, the question of ontology. The change from a linear model to a multi-linear or spatio-temporal model is more than just the change from a simple line to a more complex diagram or space, it involves moving from one kind of representation to another.

A Lonely Impulse of Delight

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As he settled into the snug cockpit he tried
 not to think about the obvious thing.
Ahead of him, through the windscreen, he
 could see a long low hill. It was further
away than it appeared to be, and much bigger.
Yellow through the blue haze, the hill
squatted on the plain, low and indolent and
 massive. He wanted to be over that hill
and look beyond.

Before him stretched the grey runway, on
the left a yellow haystack, on the right a
white airfield building. All around him was
the blue airplane. He opened the throttle
and the plane began to inch forwards. The
nose veered to the right, towards the white
building, and he rapidly adjusted the plane
to the left.By now the ground was rushing
past and the tail starting to lift. The nose
came down and he could see the ground
immediately in front for the first time,
a streaming grey blur, and the end of the
runway rushing up to meet him. At the last
possible moment he pulled the stick back
into his stomach and the plane lurched into
the air.
Vertigo.
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Afficionados of the Hellcats flight simulator will recognize the landscape - an American airstrip on one of the Solomon Islands in the Pacific Ocean. The time is WW2. This is the beginning of an account of an experience of my own, flying a Hellcat on a mission against the Japanese Navy.

Hellcats is effectively a screen and mouse based virtual reality system - 2nd person VR - offering non-linear adventure stories. The reader - or should it be participant, or player - is free to move in any direction, at all times, as long as he or she never gets out of the plane. This cuts down the scope of the story significantly - it's like Top Gun with everything but the flight scenes cut out. Hellcats is a simulator which models a space and a set of rules - the aerodynamics of a propeller plane - for moving through that space. It provides a simple narrative framework within which to act - the struggle against the enemy - and it provides characters to interact with, what appear to be independent narrative agents with their own characteristics and motivation - Japanese airplanes, gunners and ships.

As a representation of the experience of Americans during WW2 in the Pacific, Hellcats can be compared to South Pacific or From Here to Eternity. Yet despite the similarities of place and time, Hellcats is a very different kind of representation. Hellcats represents one specific aspect of the experience of the war in the Pacific, but it is the experience of the machine, to misquote Stephen Heath, rather than the experience of the pilot. More precisely, it is the experience of the pilot insofar as he or she is an extension of the machine, that part which keeps the plane in the air and flies this way or that way, presses the trigger and drops bombs, but never that part with a history, a family, skin colour, memories, desire, plans for this evening...

Certain key attributes of narrative form are missing.3 Narrative closure has to be fought for - if you crash your plane while taking off the 'story' is short, insignificant and unsatisfying. It is up to the spectator to ensure that the action comes to a satisfying and meaningful end - closure is not part of the structure of the representation but is contigent on the moment of 'reading'. Temporal and spatial coherence are more or less complete, but strictly limited to the skies above the Solomon Islands. There is no specific enigma to be resolved but a different kind of teleological imperative, that of a participant in a violent struggle. If we consider what Barthes has called the symbolic code, that code which accounts for the formal relationships created between terms within a text - the patterning of the text, antithesis, graduation, repetition etc, we find it absent in Hellcats. The simulator does not signify in this way. Neither do we find much in the way of a referential or gnomic code, the code of shared cultural knowledge about the world, nor the rich and diffuse code of connotations designated by Barthes as the code of semes. What is lost is the complex interplay of signs, Barthes' 'weaving of the voices' across different registers, the 'perspective of quotations', the 'mirage of structures', the 'multivalence of the text'. These are replaced with a wide band of sensory information refering to specific and schematic aspects of a situation - the proairetics of flight, the hermeneutics of battle.4 At the same time this schema is reinvested with narrative order via the subjectivity of the participant - as if subjects have a will-to-narrative which asserts itself even in the sparsest of contexts. This is a narrative which issues from the identifications the participant makes within the interactive construct - a personal narrative unlegitimated by the external figure of the author.

Ontology of the interactive image

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I saw the movie last week. I want what happened in the movie last week
to happen
in the movie this week too, otherwise what is life all about?5
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The principal distinction to be made between an interactive representation, like Hellcats, and narrative representations like those of the cinema and literature, lies in the representation of time. Narrative refers to the past. It is an account of events which have already taken place. Its temporal referent is once upon a time. This relationship to time is not affected by the verb tense - the present tense is often used to bring immediacy and drama to an account - nor does it depend on the reality of the events being described - fiction gives an account of things which happened, which is nonetheless untrue. This characteristic of narrative appears to be part of its very nature as representation, its ontology. The simulator on the other hand operates in the present. If in a narrative an event happened, in an interactive narrative, multi-linear or spatio-temporal, an event is happening, its temporal referent now. This ontological change has important consequences.

A linear narrative exercises a textual authority which is dispersed by interactivity. In the linear narrative, the reader submits to the authority of the text. Only the author has the power to make decisions about the story line or point of view, and the invention of narrative events is his or her sole perrogative. The text is certain of itself. Moreover this certainty has a legitimising function. Hayden White writes:

> 'We cannot but be struck by the frequency with which narrativity, whether of the fictional or the factual sort, presuposes the existence of a legal system against or on behalf of which the typical agents of a narrative account militate. And this raises the suspicion that narrative in general, from the folktale to the novel, from the 'annals' to the fully realised history, has to do with the topics of law, legality, legitimacy or more generally 'authority".6

Now this authority is expressed, and legitimacy conferred, at the moment of closure. By recounting what happened an author is also closing of those things which didn't happen. A character picks up the phone rather than letting it ring, someone walks down the street and turns left instead of right. Closure in this sense is dispersed throughout the narrative. The events unfold as a pattern which progressively resolves itself into an image, each event integrating those which precede it into progressively higher level of narrative sense, until the final closure, the end of the narrative, when the gobal event, the meaning of the story is revealed at last, and is revealed to have been immanent in all the events all along. Closure can be considered as a function of time, or more precisely of the way in which time is represented, whether as past and complete or present and ongoing.7

A story is an account of something beyond itself. The referent of a story is an event which has already taken place. A simulation or interactive story on the other hand is the event in waiting; it refers to a principle, a set of rules, an algorithm, a stasis outside of time which can simulate events in time. The referent, the thing other than itself to which the simulation refers, is the condition for events, not the events themselves. Closure - the cutting out and sequencing of events from the mass of possibilities - is effected by the spectator, albeit within a framework of conditions designed by the author.

It is here that we find the apparent disjuncture between the nature of interactivity and that of narrative. The moment the reader intervenes to change the story (at the nodes of multi-linear narrative or at every moment in a spatio-temporal simulator) is the moment when the story changes from being an account of events which have already taken place to the experience of events which are taking place in the present. Story time becomes real time, an account becomes an experience, the spectator or reader becomes a participant or player, and the narrative begins to look like a game.

Herbert Quain

In An examination of the works of Herbert Quain, Borges invents an English multi- linear novelist of the 1930s. Less often referred to than Garden of Forking Paths, this short story is no less remarkable for its dystopian vision of a banal and meretricious interactive literature - what

Borges terms the 'regressive, ramified novel'. Borges prefigures the transformation of reading into playing when he makes Herbert Quain say of his second novel, 'April March',

> 'I lay claim in this novel... to the essential features of all games: symetry, arbitrary rules, tedium. Indeed, 'Quain was in the habit of arguing that readers were an already extinct species. 'Every European,' he reasoned 'is a writer, potentially or in fact.' He also confirmed that of the various pleasures offered by literature, the greatest is invention."

Symetry, arbitrary rules, tedium. Those familiar with interactive artefacts of the last few years will recognize these depressing qualities in countless CD-roms, computer games and pieces of multimedia. The question becomes - is this what interactivity is really about - is this poverty an aspect of its nature, or is it a failure of imagination so far by interactive producers and designers? Does something which is interactive have to be like a game? And if so, does a game have to be as uninteresting as Borges suggests?

I first heard the interactive story being described as a kind of game by Max Whitby. Max Whitby heads the MultiMedia Corporation, a company producing interactive titles on CD set up in 1990 as an independent offshoot of the BBC. Max argues that the term interactive narrative is an oxymoron - and believes that an interactive narrative can never be as satisfying as a traditional linear story. The interactivity, Max suggests, gets in the way. At the same time he recognizes the tremendous potential of new media and understands why so many people get so excited about it.

> 'Something happens to people, especially people who come from a film or television background when initially exposed to the idea of interactive multimedia. When you first realise that computers are not just tools, but a new medium through which information can be delivered in completely new ways, a lightbulb goes on - it certainly went on in my head and I've seen it go on in lots of other people's heads. Instead of the high priests in their ivory towers deciding what a TV programme will be, you can hand over your programme material to your audience and they can construct their own experiences. Now that basic premise is very exciting. The trouble is it doesn't sustain. When you actually get in there and try to make things in an interactive way, the premise falls apart.
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> The problem is - and its terribly obvious really - that most successful communication involves a great deal of craftsmanship and authorship and point of view and storytelling and narrative. Every successful form, be it a novel or a feature film or a play or a comic, needs a skilled storyteller to weave together a spell in the mind of the audience, suspend their disbelief and take them on a carefully planned emotional roller coaster through the story. Every successful form of communication involves protaganists, a set of conflicts and experiences, and at the end some sort of resolution so the thing has a satisfying shape. Interaction largely destroys all that. By giving the audience control over the raw material you give them precisely what they don't want. They don't want a load of bricks, they want a finished construction, a built house.
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> Although the light bulb still goes on in my head and I'm still excited by the possibilities, I have realised you can't apply the notion of interactive multimedia to an awful lot of successful existing forms. One form that does make sense on a computer is that of the

> game. Computer games are as spellbinding and absorbing as a good movie. However, what is going on in people's heads in a game is very different from what is going on with a play or a novel. I don't want to say that one is better than the other, but you can obviously do things in films, theatre or the novel that you can't do in a game, and vice versa. Most of what is generally regarded as being interesting belongs to the world of cinema and theatre and most of what we could regard as simply diverting or just a pastime belongs to the form of the game.'

Games and Stories

So what then is the difference between games and stories, and what value does this difference entail? I have argued for a distinction based on the different way each represents time, leading on to differing modes of spectatorship. However, games and stories also have very different cultural values attached to them. The game is frivolous whereas narrative is serious - the form of the game is agonistic and ephemeral, it deals in a transient athletic display. The game is an exercise which can exist only in the present (if it persists in memory then it does so as an account).

There is a general assumption here that narrative representation - literature, history, cinema and so on, has a deep and lasting significance which the game lacks. In the end Shakespeare or Proust or Pasolini seem to have more to offer than a game of football or Sonic. The game is outside of history, unworthy of serious remembrance. At the M.I.T. multimedia conference in Dublin in 1993 a speaker bemoaned the fact that his son spent too much time playing computer games and not enough time reading books. Thinking of my own child, I found myself nodding in agreement. Yet when a woman asked from the floor why reading a book was better than playing a computer game, he couldn't explain his assumption and neither could I. Two other speakers gave a fascinating account of an elastic movie. This was a multi-screen installation constructed as part of a student workshop at M.I.T. which the spectator moved through and interacted with. The speakers called it an interactive media environment, an installation, a transformational space, fine art circumlocutions for the obvious term game which they managed to avoid entirely throughout their paper. Then they showed a video of their undergraduate students discussing the design of the project and the word game cropped up over and over again. Finally, throughout the whole 2 day conference on interactivity, discussion of console and TV computer games was almost entirely absent, in spite of the release by Sega of CD drives and non-linear cinematic games on CD, in spite of the astounding commercial success of Nintendo in the youth market, in spite of CD-i, in spite of 3DO...

In my class in interactive media at the University of Westminster I encourage the students to play computer games - Hellcats, Spectre, 4D boxing and so on - to give them a sense of the possiblities - and limitations - of the crossover between interactivity and the story. This did not initially meet with the approval of the department and there is still a lingering suspicion that those students who take the module in interactivity just want to play computer games. Yet nobody accuses the film students of just wanting to watch films. Many college computer rooms have a notice on the wall warning that the playing of games is banned. The game is not work but a diversion from work, nor is it a proper object of serious study. The game is something which, although tolerated, the law must seek to repress, to keep to its proper place.

A Literary Youtopia

If the repressed reading of interactivity is that of the game, the preferred reading is interactivity as Post-Modernism come true.

In S/Z Barthes describes two types of writing, readerly writing and writerly writing. What happens if we take the notion of the writerly at face value, innocently? Let us reproduce the notion of the writerly - or rather, let us post-produce it. Let us abolish the distinction between the producer (Barthes) and the reader (me, you) and rewrite the writerly. Let us read excessively, irresponsibly, futuristically.

> 'The goal of literary work (of literature as work) is to make the reader no longer a consumer, but a producer of the text...
>
> The writerly text is a perpetual present, upon which no consequent language (which would inevitably make it past) can be superimposed; the writerly text is ourselves writing...
>
> In this ideal text, the networks are many and interact, without any of them being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one; the codes it mobilizes extend as far as the eye can see ...' 8

In this excessive reading the writerly becomes a fantasy of the multi-linear text, Barthes a kind of Nostradumus of literary theory, writerly writing the uncanny prophecy of an interactive literature come to pass. Indeed, a number of commentators have noted the way in which poststructuralist writing seems to anticipate the non-linearity of new technology. In Hypertext - the convergence of contemporary critical theory and technology, George P Landow suggests that the literary theories of structuralist and post-structuralist thinkers (especially Barthes and Derrida) find their embodiment in interactive hypertextual forms made possible by new technology. Hypertextual and non-linear structures promise Barthes' writerly text, never far from the possibility of rewriting, multivocal, decentred, without boundaries, a text which can break free from the chains of closure, a text whose instability lies not in our postmodern apprehension of it but in its very condition of being. Hypertext for Landow is post-structuralism made flesh, transubstantiated - Foucault's death of the Author a corpse, Derridean d  bordement actualized as hypertextual annotation... 9

The problem with this kind of literal and utopian mapping of post-structuralist theory onto new technology is that it fails to acknowledge its own excessiveness. It is ironic that a set of theories which stress plurality and indeterminacy should be employed in the service of a reductive equivalence between very different types of discourse, a critical discourse of interpretation on the one hand and an instrumental discourse of interaction on the other.

Instrumental stories

'Science has always been in conflict with narratives'10

We have seen how a putative theory of interactivity might oscillate between the preferred register of the post-modern (serious, plural, decentred and legitimated by the academy) and the frivolous register of the game (playful, ephemeral, banal and without value). A further approach is suggested in 'The Postmodern Condition' in which Lyotard outlines an opposition between narrative knowledge (convivial, traditional) and instrumental knowledge (cybernetic, scientific). The game can be considered as a cybernetic construct (a goal directed system of control and feedback) and as such, placed on the side of the instrumental, whereas narrative knowledge, argues Lyotard, is an older form - 'narration is the quintessential form of customary knowledge...' and 'what is transmitted through narrative is the pragmatic which establishes the social bond'.16 Legitimation and authority are immanent to narrative form and are established within and through the act of narration itself. By contrast authority and legitimation are extrinsic to the form of instrumental knowledge. In scientific discourse legitimation must be fought for. Moreover, instrumental knowledge according to Lyotard is set apart from the language games that constitute the social bond. The analagous oppositions may be summed up thus:

Instrumental knowledge	Narrative knowledge
science	history
simulation	narrative
game	story
uncertain	legitimate
synchronic	diachronic

These oppositions sketch out the structural differences between two different kinds of representation. The question of legitimacy and certainty is central - the simulation remains a model which does not have the ability to auto-legitimate itself in the way an account does. The simulation or game is never more than hypothetical.12

Interactive critical theory

How then to approach the question of a critical theory of interactive representation? We might start by looking at early prototypes of interactivity on CD-Rom and laserdisk. It is vital here to insist upon the distinction between the multi-linear (Forking Paths) and spatio-temporal (VR) models. In a multi-linear construct the author can play with the space between linear sections - versions of what happened, or different points of view, connected within an authored network of simultaneity and sequence. What is explored here is the space between alternative sections of writing or video - the space is a properly literary or cinematic space rather than the cybernetically governed mechanical space of VR, and one can imagine this hyperliterature being opened up to an expanded literary criticism.

The author of a simulator or VR representation works with a different set of opportunities. Here it is not so much a question of writing in space but of designing a model. Although the author describes the characteristics of the model, he or she is not the author of the events that happen within the model once set in motion. Here, as I have already discussed, it is more difficult to talk of authorship at all. An as yet unformulated critical approach to the simulation will probably be informed by cybernetics, architecture and the theatre.13

A number of experiments can be considered as prototypes for multi-linear writing and as pointers to a criticism of new cultural and literary/cinematic forms. These demonstrate a tension between repression and freedom, offering the reader the illusion of control within a tightly authored set of possibilities. The multi-linear model has the advantage of being based upon and incorporating an older model, that of linear writing - a model grounded at least partially in the narrative tradition, although exceeding and threatening that tradition at the same time.

In Graham Weinbrene's interactive cinema piece 'Kreutzer Sonata' the viewer is offered control over the aspect14 of the narration - the screen is divided into four temporal regions, left for flashback, right for the present, up for an expanded present and down for filmic elements which are outside of the time of the story altogether. In Tolstoy's original short story the narrator unburdens himself to a stranger on a train - telling how, consumed with jealousy over an imagined affair between his wife and her music teacher, he knifed his wife to death. In Weinbren's version the viewer is able to control the flow of narration and view the events either as perfective - seen from within the time frame of the events, or imperfective - from the external vantage point of the future.15

Thus if you point at the right of the screen you get the murderer recounting his story in the railway carriage, and if you point at the left you get the dramatic events played out in flashback. The sequence of events represented by Weinbren stays the same, however the mode of telling can throw the spectator inside or outside of those events. By pointing up or down you can overlay the fevered imaginings of the jealous husband (a sex scene between wife and music teacher), the mouth of the wife of Tolstoy cursing her husband's misogyny, references to Freud's The Wolf Man and the classical image of Judith with the severed head of Holofernes. The climax of the piece is an interactive wipe which the spectator controls by waving a finger at the screen - outside the music room the agitated husband paces up and down while inside the wife and teacher practise the Kreutzer Sonata unaware of the tragedy about to befall them.

The experience of viewing 'Sonata' is both exhilarating and dislocating. Unlike a fully interactive fiction in which story events themselves are switchable, The Kreutzer Sonata progresses inexorably from beginning to bloody end, but the route taken is profoundly different with each viewing. One showing might be as grammatically correct as a costume drama on the BBC, another as obliquely avant garde as a French art movie. The interactivity here doesn't 'get in the way' as Max Whitby suggests, but provides an extra dimension within which to write and read the movie.

Claudia Frutiger, Alejandra Jiminez and Kate Reddit have recently authored an interactive eternal triangle in which 3 strangers, thrown together for the night in an isolated hotel, ponder which of the other two they can bear to share the only room with. The story offers the viewer the

chance to control their identifications with the characters - by choosing a character's point of view, that character becomes the protagonist around which the story organises itself. Each point of view is partial - what is concealed from each character is more important than what is revealed. The story is cyclical, complex, enigmatic and without resolution.

What these experiments reveal is a tension between gameplay and the story, between the instrumental and the narrative function. To put it simply, the more of a story it is, the less of a game, and vice versa. A reconciliation of this impasse suggests itself from a surprising quarter. The form of pornography is both narrative and goal directed, referring to fictional events and a kind of arousal game with a clearly defined outcome. The pornographic story joins the reader in a cybernetic construct - within this cyborg-text the body of the reader and the body of the text respond to each other. Pornography has been well represented in early interactive commercial products and the notion of virtual sex is the dominant popular fantasy about VR (at least among journalists).

Conclusion

There are two potential endings for a discussion like this, either optimistic or pessimistic. Neither is appropriate in this case. The 'interactivity is post modern' school of thought sees interactive representation as a liberation from the repressive authority of traditional narrative form. There are echoes here from the avant-garde and anti-narrative movements in cinema and writing which have their source in the utopian ferment of the 60s. (See Zap Splat... Malcolm le Grice) Yet the consequences of the opening up of closure - that interactivity will be 'commonplace, unlaborious, shallow, un-literary, heterodox'16 are more difficult to accept.

Others see the simulator as promising post symbolic representation, bypassing the patriarchal distortions of perspective and the controlling point of view. VR in this argument offers not the representation of objects but the representation of relations between objects within which the participant can select their own point of view. By using immersion interfaces the participant can gain, so the argument goes, direct (ie unmediated, objective) access to pure data, (a realm both digital and noumenal). However, in characterising this as a shift from coded representation to experiential post-representation what is glossed over is the coding and mediation involved in constructing the experience in the first place.

If the politics of a change in representation is centred on the move away from narrative with its baggage of authority, certainty and closure, the politics of interactivity at a more general level are about the end of mass culture. Interactive television or video telephony promises profound transformations in cultural and political life by fundamentally reordering the communications infrastructure away from a broadcast architecture in favour of a fully distributed network like that of the telephone system. A clue to the nature of this transformation is provided by the rapid growth of TV shopping operations in the US. The largest home shopping network, QVC (quality, value, convenience), now has a turnover of well over one billion dollars, more than double last year's figure. An indication of the crossover from shrink wrapped interactive products to an interactive infrastructure is provided by the Sega games cable TV channel which will go on line in late 1993.

As some see in interactive representation a liberation from the repressive authority of narrative, so the interactive infrastructure seems to promise liberation from authoritarian political control. Mitch Kapoor percieves a radical opportunity for libertarian democracy in the digital network. He asks 'What if Thomas Jefferson had designed cyberspace?' and goes on to propose a Jeffersonian model of a decentralised global information network in which the notion of a free and equal community of participants replaces that of the centralised state. The network has the potential, according to Kapoor, to realise Jefferson's vision of 'putting power in the hands of the people to use as they see fit'. But which Jefferson are we talking about here - the 'democratic' apostle of the rights of man, or 'Massa Tom', theorist of white supremacy and owner of 150 slaves? And which people? The problem with 'Jeffersonian cyberspace' is that it has the potential to further exclude from politcal participation those too poor or too black to buy into the vision. And yet the vision is a compelling one, sufficiently so to quash troublesome political doubt from those who might be expected to know better. When the clean-shaven millionaire homophobe Ross Perot announced, during his Presidential run in 1992, his dream of participatory democracy based on the Electronic Town Hall even an impeccably liberal commentator like Brenda Laurel felt able to consider offering him her vote17.

Is this the end of the road for narrative, grand or otherwise? Are we to become a people without stories? The linguistic category of aspect provides a useful analogy here. The shift from narrative to the simulation entails an aspectual shift like that from perfective to imperfective, from outside to inside the time of the situation being described. Thus narrative representation and interactive representation might be different ways of viewing the internal temporal constituency of a situation'18 As interactivity increases the spectator is thrown inside the representation to become a participant. Yet at the heart of the interactive representation narrative reinstates itself through the subject narrativising the experience. If narrative is a technique for producing significance out of being then simulation can be seen as its inversion, a technique for producing being out of significance. Rather than a people without stories, interactivity offers the promise of a people within stories, and rather than the end of narrative, an explosion of narrative within the simulator.

Like any other form of representation, interactivity is an illusion. It puts itself in the place of something that isn't there. What is the absent referent of interactivity? If interactivity promises the spectator freedom and choice, it is precisely the lack of such freedom and choice that interactivity conceals.