

Interactive narrative as a multi-temporal agency

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Introduction

This paper introduces the concept of aesthetic transcription as a model for the production of interactive narrative within digital cinema. Aesthetic transcription refers to the cinematic capture and reconstruction of multimodal forms of information within virtual environments. The term cinematic as used in this essay refers to the domain of the moving image as it is currently under re-definition within new media technologies. Through means of an experimental design entitled *T_Visionarium* that enables beholders to search and recombine televisual data, this paper explores the conduct of interactive narrative as a model of aesthetic transcription. The value of the study is set against the fact that while narrative is central to conventional cinema, emphasis upon simulation has caused the narrative potential of digital media to be overlooked (Baudrillard 1993:b, Lyotard 2000, Reiser and Zapp, 2002). This paper addresses the concern that it is limitations in narrative, as opposed to technical understanding, which have restricted the aesthetic development of digital cinema (Del Favero, Howard, Gibson, Shaw, 2002). Through its focus on beholder-generated recomposition of time within virtual environments, the proposal builds on the authors' existing research into the multi-spatial character of interactive narrative in digital cinema. In particular it seeks evidence of the multi-temporal agency of interactive narrative as it is currently advanced within revisionist cinematic, critical realist and systems theory (Deleuze 1995, Searle 1995, Serres 2000).

Transcriptive narrative integrates the temporal agency of narrative with the inherently multi-modality of digital information. The study aims to test the simple proposition that interactive narrative occurs as a function of the transportation of multi-modal information across virtual time. In testing the transportation of information within virtual time, however, we anticipate evidence of a previously un-described multi-temporal outcome within narrative. In multi-temporal narrative, we argue, beholders not only re-compose complex information into temporal episodes, they simultaneously experience the unanticipated temporal consequences of these virtual episodes as real events. This emerging and looping intersection between virtual time and real time produces a mode of narrative that contrasts dramatically with the temporal sterility of the closed narrative menus typically found in computer games.

We propose an experimental framework which allows the interactive transcription of televisual information as a form of recombinatory search *T_Visionarium*. In particular *T_Visionarium*:

- allows beholders to spatially navigate televisual broadcasts in real time and televisual database in virtual time within an immersive, interactive, multi-modal environment set within a dome 12 metres in diameter by 9 metres in height made of inflatable fabric;
- provides for the beholder to originate unique performances within this dome by means of their interaction with a computer database containing over 40 hours of pre-recorded cable television data streams which can be reprocessed and recombined by means of a touch screen interface articulated to a head mounted tracking system and pan tilt projection system which projects the televisual data onto the interior skin of the dome. The beholder, by shifting their head, moves the large projected viewing window across the interior surface so that the movement of the projection windows enables the beholder to navigate between these multi-modal data streams;
- enables the beholder to immerse themselves in both virtual and real time modalities to explore the expressive potential of transcriptive as opposed to conventional interactive narrative.

The re-enactment of televisual information has the potential for allowing a multiplicity of significant differentiations or fissions to occur within the original data. The great mass of broadcast or recorded televisual information, is already received indirectly by the beholder and sorted retrospectively in episodic memory. Television is encountered through techniques such as - channel hopping, muting, and multi-screens, through multiple association in different contexts, or fragmented through time-delay and by report. Thus even though television broadcasts may begin as purposeful artefacts, their meaning for the beholder is not exhausted by critical recovery of their producer's original intentions. Rather, their meaning is revitalised into temporal, directional, and irreversible narrations, transcribing the functions such information is felt to cause and can be shown to perform (Prigogine 1996:27).

In relation to the purposes of transcriptive narrative, Serres argues - "We are dealing less with the story of how something came about than with the dramatisation of a pre-existing forms" (2000:84-88). Transcriptive narrative dramatises the world instead of freezing it into schematic representations. Transcriptive narrative transforms the cinema into a kind of Platonic cave wall onto which beholders project, then respond, to the episodic shadows of their journey through cultural information. It is only insofar as digital technology makes the awesome task of transporting multi-modal data within virtual time a practicality that the aesthetic potential of interactive narrative can be put to the test.

Background

The interactive architecture of digital technology provides a fresh opportunity for reformulating the role of narrative within cinema (Dinkla 2002:34; Dovey 2002:144). Current experimentation in interactive narrative is handicapped by under theorization of the role of time and the significance of critical attribution in virtual environments (Melcher 2000 and Dove 2002, and elaborated under E3). We know, for instance, that digital architecture is multi-modal (Weibel 2002:51). We also know that multi-modal artefacts are shaped by software rather than semiotic codes (Manovich 2001a:15). Software compresses information into virtually realisable and interpretatively thick units of meaning. Notwithstanding the use of digital animation in conventionally scripted cinema such as *Shrek*, which laboriously render graphic images from scratch, or even in post-production enhancements such as *Waking Life*, the multi-modal information delivered to producers of digital cinema is already condensed into cultural tokens of text, sound and image at the point of contact. For this reason the metaphors of production in digital cinema borrow from images of montage, layering and re-assignment rather than from fabrication. The manipulation of culturally prefabricated information in digital media rehearses the long-standing artistic tradition of transcription (Weibel 2001:28). In this tradition the artist is presented with a body of meaningful informational resources or cultural goods which they reassemble in the process of creation. Thus the roles of the artist and beholder in a transcriptive model of cinematic production are editorially intertwined.

In two important respects, however, the multi-modal information employed in digital forms of production asserts an independent agenda. In the first respect the information rehearses the inbuilt user constraints or motives within the software. In the second respect the software implicitly re-asserts its cultural intentions through the information it is designed to select. This study takes the effect of this multi-modal agenda upon the production of interactive narrative seriously. First, unlike literary narrative cinematic narrative is distinctively eventful. According to Deleuze, the two key variables in the formulation of cinematic narrative are duration and movement (1995:59). Thus, even in conventional cinema the beholder's direct awareness of unfolding events is complicit in bringing the narrative to closure. When the opportunity to direct the duration and movement of information is also seized by the beholder then, following Deleuze, they gain, in principle, possession of the tools necessary for the production of narrative. The beholder is able to effect the lines of narrative not only indirectly, by re-assigning the network of episodic linkages between the information, but also directly through reflexive exposure to the unprecedented aspect of these episodic networks as they unfold (Danto 1973:117).

However, the narrative reassignment of complex multi-modal information is only practical within the dialogic context of virtual environments. Only within the technical possibilities afforded by digital technology can the beholder, retaining their role as beholder, assert autonomy over the temporal direction of the narrative. In this study the recombinatory power of the digital software proposed in *T_Visionarium* allows the analysis of televisual kinds of information into complex layers. It also enables beholders to reassign the connections among these layers by pleating and creasing their topology until they cascade into new episodes of autonomously unfolding events. The design of the recombinatory algorithms borrows from Manovich's concept of software behaviour. The recombinatory software and its associated interfaces furnish the beholder with multiple entry and exit points to the information, and with the facility to rehearse it as narrative content on the fly (Manovich 2001a:16). Thus the software interfaces in which the algorithms are deployed are engineered to capture existing televisual information in ways that are sufficiently sensitive to the nuances of its eventfulness for the beholder (2001a:17).

Second, the imputational reasoning which guides the design and application of the transcriptive software in this study mirrors the social realism of John Searle (1995). Searle argues that meanings are ascribed to cultural artefacts according to the functions their stakeholders agree upon them to perform. He cites money and calendrical time as instances of significant social artefacts existing only by virtue of the functions attributed to them. Insofar as functional properties can be ascribed, it follows that properties, such as international rates of currency exchange for instance, are always open to re-ascription through the interaction of its players. However, susceptibility to re-ascription does not necessarily render functional attributions as relativistic, fickle or self serving if, argues Searle, ascriptions are authentically motivated by institutions of craft, knowledge, education, and ideology (Searle 1995:15, Weibel 2001:35, Brown 2001:313). Neither does the process of ascription herald a descent into rational determinism. The ascription of felt changes in artistic function for instance, although generated intuitively, may be attributed for very good emotional and aesthetic reasons (Bourdieu 1982:163-167). It is a critical role of the cinema, in particular, to act as an instrument in the aesthetic transcription of cultural information and to serve as an organ of cultural dissemination. We examine the proposition that beholder driven narrative in digital cinema is poised to become a central agency in this important project.

Transcriptive narrative

This study establishes the first temporal theorization of interactive narrative. The interactive system it elaborates expresses a transcriptive framework which is naturally resonant with the digital. Transcriptive narrative is a recursive system made up of a large number of self-organizing and interdependent elements, able to launch the beholder into richly textured engagements with cultural information. The form of these engagements is both ascriptive and episodic insofar as they allow the dramatisation of freely available information into forms that are eventful and cinematic in character. The significance of transcriptive narrative is thus reinforced through the dramatised revivification of cultural information. As a technical and critical framework transcriptive narrative is 'ecologically' efficient. It recycles the abundance of readily available cultural information into significant multi-temporal episodes.

Although crucial to the artistic expansion of digital cinema the construct of narrative time in interactive narrative has remained, for a number of reasons, strikingly under-developed. First, because the multi-modal logic of interactive cinema is ill-defined and second, because multi-modal forms of digital interactivity are technically over-determined and fixated on the simulatory. The upshot is a domain that continues to elaborate its identity on a spatial as opposed to a temporal plane severely limiting its aesthetic deployment as a cinematic medium. In short, the development of narrative in interactive cinema languishes both for want of integrated research in communications as much as technical infrastructure.

The ascriptive critique underpinning the concept of transcriptive narrative provides audiences with the opportunity to navigate through a body of cultural information in a way that is rich in aesthetic possibilities. Teamed up with new recursive software and playback search technology, the interactive production of cinematic information gives the beholder the means of investing salient social and cultural issues with added significance. *T_Visionarium* models a platform accessible to popular audiences which demonstrates audio-visual recording and presentation technology specifically designed to accommodate singular, irreversible, and recombinatory narratives that, unlike video games, do more than rehearse a predetermined set of permutations. As a prototype for new forms of digital cinema and cultural communication the study provides an opportunity for major commercial and artistic applications to harness interactive narrative as a powerful communicative tool, thus opening up a narrative genre equivalent in reach to that currently exercised within conventional cinema.

Multi-temporality

This study formulates a multi-temporal, anti-representationalist identity for interactive narrative. Insofar as it eliminates a significant impediment to the design of interactive content and software in new media the study is an important advance in the field. The study takes a novel approach to the theorisation of content within digital media which is currently informed by simulacry and uni-modal, rather than cinematic understandings of aesthetic production (Baudrillard 1993a:70). The reason for choosing an anti-representationalist approach is twofold. First, we are careful not to equate the unfolding of narrative with the simulation of movement. While movement is a defining feature of cinema, movement and its simulation alone provides an insufficient context for the theorisation of cinematic narrative. Animation, or faux experiences of spatial movement produced by the donning of video head sets, for example, beg the question of narrative. We also set aside the hyper-representationalism of Jean Baudrillard for whom digital narrative invokes a field of infinitely reversible simulacra (1993b). Such a timeless and symmetrical referential system can never actualize new narrative content nor unfold narrative events. It can only ever posit an infinite regress into representations of a perpetual present.

Second, the authors turn away from psycholinguistic assumptions which understand narrative as the recovery of representational structures from semantic memory (Willemsen 2002:20). Following Deleuze we approach narrative as the episodic recomposition of emergent events within the affective, sensory and cultural memory of the beholder. Like Bergson, Deleuze lends movement to thought. The process of thought is described as episodic reflection on the contingencies of a self-conscious passage through reality (1995:149). Narrative time is not, therefore, something to be recovered from scenarios dealing literally with interactive time, as typified in works such as Tony Dove's interactive narrative *Spectropia*, 2001 (Dove 2002:216). On the other hand the temporal complexity evident in Bill Viola's interactive computer installation *The Tree of Knowledge* 1999, comes closer to the mark (Melcher 2000: 47). Here the dynamic potentiality of utilizing complex interrelationships between diverse durational components, for example the speed and position of the beholder linked to graphics software parameters, enables the bonding of navigation and movement. For our understanding of interactive post-processing in terms of this bond we turn to Serres.

Serres explains the narrative relation between the subject and the object as two dynamically interdependent durational systems. For Serres both objects and subjects are interactively defined by their temporal relations. Serres illustrates this relation by reference to the example of geometrical measurement provided by the Greek mathematician Thales (Serres 1982:90). To measure the length of the shadow of a pyramid at a particular time of day, for example, is to express the interrelationship between an object in motion (sun) and an object at rest (pyramid). In enunciating measurement as the duration or tempo of the relation between the pyramid and the sun Thales converts mathematics into a narrative form. Serres proposes that subjective activities, such as narration, are intertwined with objective processes, such as motion, whereby narrating becomes navigating and navigating is narrating. Subjectivity and objectivity form a "liens" of interactive encounters conditioned by their recombinatory multi-temporal relations (Serres 1995:177).

Experimental design

T_Visionarium is an immersive, interactive, multi-modal environment set within a dome 12 metres in diameter by 9 metres in height made of inflatable fabric. It allows beholders to spatially navigate either televisual broadcasts in real time (Modality 1) or a televisual database in virtual time (Modality 2)

On entering the dome the beholder places a magnetic position-tracking device, connected to stereo cableless headphones, on their head. The beholder then steps onto a control platform at the centre of the dome where the touchscreen interface, projector and computational hardware are positioned. The touchscreen interface enables the beholder to move between *T_Visionarium's* two modalities of operation. The projection system is fixed on a motorised pan tilt apparatus mounted on a tripod which projects televisual data onto the interior skin of the dome. The projection system is articulated to the tracking device so that the beholder, by shifting their head, moves the large projected viewing window across the interior surface. This tracking device identifies the exact orientation of the beholder's point of view, which in turn controls the orientation of the projector so that it presents an image directly in front of where the beholder is looking. The audio-visual data streams are virtually distributed over the entire surface of the dome, so that the movement of the projection windows enables the beholder to navigate between these multi-modal data streams. The delivery software creates a spherical distribution of all the televisual data by their real time texturing onto a virtual polygonal model of the dome. In other words, the real time and stored televisual data sets are physically mapped over the dome surface such that each data set is allocated a specific window grid on the dome's surface. This enables the beholder to navigate between each data set by merely shifting their point of view. This mapping strategy applies to both image and sound. Seamless transitions between discrete image and sound events are handled by specific design parameters of the audio-visual delivery system. The acoustic delivery system is based on the use of RF cableless headphones. The mixing of the audio, synchronised with the movement of the pan tilt projection system, allows a fully spatialised soundscape inside the dome to be synchronised with the distribution and experience of the visual content.

Within Modality 1, data streams are constituted by real time access to 24 channels of incoming television broadcasts. These are captured by satellite dish and distributed to the visualization system via receivers connected to the delivery computer.

Within Modality 2, these same satellite data streams are recorded onto a hard disc system and sorted within a database. By the application of a recombinatory software matrix, unprecedented narratives are re-configured from this database by the beholder. By means of their interaction with the matrix interface and simultaneous movement of their head and projection window the beholder originates unique performances on behalf of a larger viewing public of up to 80 persons. This strategy allows beholders to experience the sense of a wholly personalised authorship. To this extent the recombinatory matrix produces a deeply interactive authorship, emergent in the encounter between the beholder and matrix in multi-temporal time.

T_Visionarium embodies a transcriptive interactive narrative matrix incorporating a uni-temporal control reference against which its multi-temporal capacities can be measured. Enabling the beholder to immerse themselves in both virtual and real time modalities it explores the expressive potential of transcriptive as opposed to conventional interactive narrative.

Modality 1 constitutes an ensemble of information juxtaposing the simultaneous television transmissions of 24 incoming cable channels in real time. It permits the beholder to surf among the 24 options in a uni-temporal flow by scanning between the channels across the surface of the dome. Modality 2, on the other hand allows new recombinatory narrative content to be generated by the beholder. Navigation through the data sets dramatises the televisual information archived in *T_Visionarium's* database. These data sets are re-constituted across the interior skin of the dome under the converging impetus of beholder and matrix and are encountered as emerging multi-temporal events.

Data processing in Modality 1 is confined to the durational pathways ordained by the real time transmissions of the 24 broadcasts. This represents a low syntactic level of organization, sorting televisual data as sequences. On the other hand, data processing in Modality 2 is animated by the recombinatory parameters of the interactive software. Modality 2 is based on recorded broadcasts from 24 global satellite television channels during simultaneous 60 minute periods. This data is post-processed by the matrix in ways that hyperlink the variegated data sets in virtual time, to form a large-scale database. Based on deep content authoring, which allows high levels of semantic and abstract classification, the matrix sorts the data according to characteristics of language, movement, colour, speech, composition, lighting and pattern recognition as organised by identifiers originating as functional agencies within a conceptual framework (Wactlar:1999). The beholder explores the results of these recombinatory searches by moving the projection window across the dome screen. Selecting the keyword "home", for example, ushers forth intersecting cascades of current affairs, sports, features, life style, historical, scientific, musical and anthropological episodes of "home", across 24 channels, a multiplicity of languages, numerous time zones, and a heterogeneity of cultures within the simultaneous 60 minute time frame. The recombinatory matrix unravels these convergences of multi-modal data at temporal levels of intensity, archival density and extensiveness that only become recognisable as they coalesce in the complex time projected across the dome. The beholder can intensify, deepen or extend these events as they unfold, fine-tuning the search within "home" by selecting the keyword "bedroom" for example. Thus with changes to their point of view the beholder activates a powerful navigational matrix that produces a directional flow of information in which the expressive meaning of the data is boundlessly transcribed. Beholder dramatisations of the data are then archived into the database to form part of the experimental evaluation of the study whilst being simultaneously handed onto other beholders for further interaction.

The profoundly multi-temporal logic of Modality 2 echoes the theoretical architecture implicit in digitised audio-visual data (Grosz 1999:27). This logic is imperceptible in Modality 1 which, like other conventional viewing frameworks, can only recover time analogically by scanning and juxtaposing whole fragments. At best, conventional viewing establishes symmetrical patterns of temporal resemblance among broadcast items that are based on syntactical properties patent within the data (Casares:2001). Transcriptive narrative, as embodied in Modality 2 moves beyond this logic of resemblance. It is able to unfold new content within a virtual infosphere of digitised images and sounds whose patterning is freed from the constraints imposed by the analogical, or representational, re-delivery of information. Sifting through digitised televisual data the beholder unravels sub-visible links. By cutting the multi-modal structure of pre-recorded information at a number of aesthetically significant joints the recombinatory matrix coalesces new audio-visual streams into episodes that can be functionally re-assigned a narrative. Reassignment is made at the discretion of the beholder within the infinite latitude extended by virtual time.

As a consequence narrative becomes a complex event which interlaces a number of intersecting temporal and physical navigations. Temporally the matrix allows for intensive, dense and extensive navigation of sequential audio-visual data and their reconfiguration into hyperlinked asymmetrical virtual streams. The beholder, by selecting a specific parameter can refine these streams by zooming into a specific current within the streams. Once projected across the dome the beholder can then process these new virtual time currents in real time by physically navigating the projection window across the surface of the dome. This interweaving of matrix and beholder navigation with real and virtual time processing precipitates the emergence of unprecedented narratives. In this respect *T_Visionarium* opens interactive cinema to a multi-modal aesthetic of a kind that is currently confined to the uni-modal contexts such as text-based chat rooms. It augments the Investigator's existing research into narrative as a form of dialogical interaction within virtual space, by the addition of beholder generated transcription of cinematic information within virtual time.

The *T_Visionarium* methodology provides a meta-model for transcriptive strategies. *T_Visionarium* is appropriate for other database formations ranging from the Internet, library, defence and image archives to the abstract modelling of beholder attitudes applicable to the field of advertising. By sifting through seemingly inchoate and unrelated data, transcriptive narrative creates new logics of data inter-relationships. This "media ecology" recycles waste data into new sensory fields of experience and communication. At an individual level applying transcriptive narrative to materials that are already bound together in proto-narrative formations— such as family photo and moving image archives – reveals the profound recombinant potential of transcriptive narrative, especially revelatory to those who are its protagonists.

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