

# From the Silver Screen to Cybercinema: Conceptions of Space in Interactive Narrative Design

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## ABSTRACT

As technological development in computer processing speed and screen resolution advance and the limitations of bandwidth are removed, designers are challenged to incorporate cinematic elements into their interactive digital environments—transforming the ways in which their ideas are communicated, and more importantly, experienced by the user. This paper presents an experimental approach to teaching interactive digital design that fuses traditional filmic concepts of screen space, narrative structure and audience engagement with the programming capabilities of Macromedia Flash to create web-based “storytelling systems” that allow the user to select and construct their own time-based experience from a set of provided data ingredients. It emphasizes user experience in its approach to audience engagement and interactive narrative structure.

## INTRODUCTION

As digital technology and its venues for distribution alter the ways in which designers can reach their audience, design educators are challenged to present innovative modes of visual communication that prepare students for the full promise of interactive digital design. At the University of Cincinnati, students in my Digital Design III class are creating interactive web-based exploratory environments in which the user can construct narrative sequences from a set of thematically related data ingredients in the form of digital animation, video, and audio clips. Their ultimate objective in this process is to design an interactive system that provides a rewarding narrative experience for the user. This methodology transfers traditional filmic concepts of split screen or multiple screens with visual interface design, emphasizing multiple active frames/windows in the graphic user interface. It utilizes Flash Actionscript to immerse the user in exploratory environments. It delineates, however, audience engagement in traditional film narrative, where the creator has control over all aspects of the story, from interactive narrative, where the designer willingly relinquishes absolute control over narrative development in order to engage its user. In doing so, digital designers must view the story as constituent elements of a system rather than a fixed linear narrative. In this context designers are more like architects than authors, constructing a database of narrative possibilities that exist within the framework of a conceptual environment. By linking the elements of this database in a particular order, the user can perceive and/or conceive the narrative, generating a unique work that subverts the passive, voyeuristic role in which audiences experience traditional time-based narrative media and reshaping the relationship between the designer and the user. This pedagogical approach to web-based interactive narrative design is formed around in-class projects that emphasize theoretical principles, design processes, and technical skills. This paper is focused on those classroom explorations.

## SCREEN SPACE AND THE CINEMATIC NARRATIVE

“All of the features of framing are present in every framed image. Paintings, photographs, comic strips and other images all furnish instances of aspect ratios, in-frame and out-of-frame relations, angle, height, level, and distance of the frame’s vantage point. Just as painting before it, cinema presented us with familiar images of visible reality — interiors, landscapes, human characters — arranged within a rectangular frame.”

David Bordwell and Kristin Thompson  
*Film Art* (1986)

In 1927, the French film director Abel Gance forever changed the way audiences would experience cinematic space when he utilized three projectors and three screens to project the last eighteen minutes of his epic silent masterpiece, *Napoleon*. He called his technique Polyvision, using the greatly expanded screen space for both vast panoramas that spilled over all three screens and triptych images that splintered the screen into simultaneous and parallel imagery. Both techniques allowed for multiple images within a single frame, immersing the audience in a dense visual filmic space and making them part of the action (Figure 1 & 2). Polyvision revolutionized the way visual stories could be told and Gance was convinced that his wide-screen process represented the future of filmmaking. But even though the innovations of Polyvision predated wide-screen cinema by a quarter of a century and influenced generations of influential filmmakers and video installations artists, it was an impractical format for mass distribution—its innovative treatment of vast narrative space eventually subordinated by standardized aspect ratios and its split screen replaced by the sequenced images projected on the screen one at a time. For decades to come, Gance’s theory of co-existent images—the spatial narrative—would become marginalized by the widespread acceptance of the more conventional paradigm of the burgeoning film industry, the sequential narrative.



Figure 1



Figure 2

Storytelling as a form of cultural expression has encompassed modes of discourse that range historically from the spoken word to the binary language of the computer age. The emergence of each new medium of communication has spawned innovative approaches to the ways in which information can be organized and presented to its audience. The process of structuring and conveying elements of time, space and the human experience into a series of connected events that inform, educate or entertain has become known as narrative design. Whether printed as words on the pages of a novel or images projected on a screen, traditional narrative design involves the

creation of character, plot and conflict that unfold along the trajectory of a dramatic arc that rises from exposition to climax and then resolves.

### **INTERACTIVE NARRATIVE AND AUDIENCE ENGAGEMENT**

“Interactive narrative is the most ambitious art form existing today because it combines traditional narrative with visual art and interactivity. Strangely enough, these three art forms share an important feature: They allow information to be understood from multiple perspectives.”

Mark Stephens Meadows

*Pause & Effect* (2003)

Traditional film narrative is premised on the assumption of a passive audience who “suspend their disbelief” and accept the filmic construct as a form of reality. Like their cinematic predecessors, new media objects are time-based experiences, but by comparison, “an interactive narrative is a time-based representation of character and action in which a reader can affect, choose or change the plot” (Meadows 2003). In this interactive context the story can change in response to user input, altering its outcome and meaning. This presents a fundamental shift in the role of the designer, as “the goal of an interactive narrative is not to author the narrative, but to provide a context and an environment in which the narrative can be discovered or built by the readers of the story. In this way designers and authors of interactive narrative are far more like architects than writers” (Meadows 2003). In a real sense an interactive narrative is not a literal narrative at all, but a database of narrative possibilities that exist within the framework of a conceptual interface whereby the user chooses “which elements to display or which paths to follow, thus generating a unique work. In this way the user becomes the co-author of the work” (Manovich 2001).

The deliberate engagement of the user in the interactive narrative process should be linked to the development of a concept that connects the user’s involvement to the project’s data ingredients, navigational activity and project interface. The design process for interactive narrative requires that the creator understands the story as constituent elements of a system rather than a fixed linear narrative. In this context, the designer must first construct a repository for the components that will eventually comprise the narrative experience for the user. This takes the form of a database, which can be viewed as a, “symbolic form of the computer age, a new way to structure our experience of ourselves and of the world” (Manovich, 2001). The database—its buttons, images, text, and sound—are at the heart of the interactive narrative design process, “The narrative is constructed by linking elements of this database in a particular order, that is by designing a trajectory leading from one element to another” (Manovich, 2001). This linking process requires an examination of the issue of datum as narrative ingredient. Each image and sound clip should be viewed as data instead of defined linear narrative components. The user will ultimately choose the order of these individual data ingredients to be played back in the sequence they create.

Engaging the user involves an understanding of the relationship between usability and user experience goals in system design. Usability goals are central to functionality. They qualify system interactivity in terms of efficiency and its degree of difficulty to learn and remember. User experience goals are less clearly defined and more concerned with the subjective elements of user interactivity such as engagement, satisfaction, and fulfillment. The goals of designing interactive products to be fun, enjoyable, pleasurable and emotionally pleasing are different from the

more objective usability goals “in that they are concerned with how users experience an interactive product from their perspective, rather than assessing how useful or productive a system is from its own perspective” (Rogers, Sharp & Preece, 2002).

In directing a user-centered focus toward interaction design, practitioners must first define specific user experience objectives—what they will ultimately think or feel as a result of interacting with the system. These objectives link the conceptual and structural framework of the entire project—its database elements, navigational items and interface. This system strategy treats every aspect of the user experience as the direct result of a conscious design decision.

Applying principles of user experience goals to interface design involves anticipating interaction with the project’s navigational elements and considering what that interaction with the system will feel like to the user. It recognizes the course of action users are most likely to take and makes those interface elements easiest to access and use. The key is to group and arrange the information elements in ways that support user tasks and goals as they progress through the interactive system. In balancing elements of usability and the user experience, designers should also consider the emotional involvement and potential of pleasure derived from aspects of play. The user does not necessarily need to completely comprehend the functionality of the system immediately. Although the interactive system should be consistent, not everything has to be user friendly, some functionality can be hidden as the user learns how to use it. The idea of gradually revealing usability allows the user to explore the interface at their own pace, enhancing the individualized experience and adding to a unique sense of narrative development.

#### **SPATIAL NARRATIVE AND INTERACTIVITY**

“I believe that the next generation of cinema — broadband cinema — will add multiple windows to its language. When this happens, the tradition of spatial narrative which twentieth century cinema suppressed will re-emerge once again.”

Lev Manovich  
*Macrovision* (2003)

Sequential film narratives are comprised of fixed content stored in finite media that must be experienced in a linear manner in order for the reader/viewer to yield its intended meaning. Gance’s legacy of split screen spatial narrative briefly reemerged in the 1960’s with Richard Fleischer’s *The Boston Strangler* and Norman Jewison’s *The Thomas Crown Affair*. Contemporary films that have included split screen techniques include Mike Figgis’ *Timecode*, Darren Aronofsky’s *Requiem for a Dream* and Tom Tykwer’s *Run Lola Run*. In each film the use of multiple frames becomes integral to the story’s syntax. In 2003, a Bolivian director, Rodrigo Bellott used the split screen as a dialectical device throughout his film, *Dependencia Sexual*, stating, “I wanted to transgress the oppressive language of a single narrative image and to try and create an audio-visual dialogue that disturbs the complacency of the passive spectator” (Bergan 2003).

The model of spatial narrative and split screen corresponds to the paradigm of interactive narrative and its database, as the complement to traditional sequential narrative. “In comparison to narration with its one dimensional-structure of time, database information is structured in multiple dimensions. Time is usually too abstract and dysfunctional as an interface to databases, while a spatial construction...seems more appropriate. We can say that the form of narration is temporal and authoritarian because the author has organized the information in

advance. The form or interface of the database is spatial and interactive or semi-authoritarian" (Weiberg 2002).

In spatial narrative, "the logic of replacement, characteristic of cinema, gives way to the logic of addition and co-existence. Time becomes spatialized, distributed over the surface of the screen" (Manovich 2003).

In the Digital Design III class, students explore unconventional modes of narrative structure whereby the user can become the story editor. They combine narrative concept with design functionality and a thematic aesthetic interface in order for the user to experience "new media" narrative. They investigate how historical cinematic experience can be used in an interactive environment in order to create unique visual experiences—including Gance's split-screen and spatial narrative.

### STUDENT EXAMPLES

Two examples of my students work demonstrate the theoretical, design and technical processes previously discussed in creating web-based "storytelling systems" whereby the user selects and constructs their own time-based experience from a set of provided data ingredients in the form of an interface that replicates split-screen and spatial narrative.

In each project the students are required to explore a number of interactive narrative possibilities:

- The user has to interact with the objects in order to advance the story
- The user can choose different narrative paths
- The user must explore the environment and through interactivity discover and co-author the story.

The first student project, by Mark Beechy is entitled, "A Day on Film" (Figure 3 & 4).



Figure 3



Figure 4

"A Day on Film" is based on the premise of dual perspective—a dialectical pairing of conscious and subconscious, simultaneously. It is the fictional story of an unnamed protagonist from whose perspective we see the narrative unfold. As a series of still images presents the user with the scattered remnants of the previous night, we hear our protagonist in first person narration, "I woke up on the couch, slightly disoriented...expecting to have woken up in my bed. My roommate Mark wasn't home. I could tell...it didn't look like he had in a while." As we dissolve to a wide shot of two video cameras placed side by side on the table, we again hear the narration, "I saw the two video cameras. I remember that Mark and I had spent yesterday filming our day for a project at school. Wondering why I had opted for the couch instead of my bed, I thought I'd run through the videos."

At this point we dissolve to our title, and then we dissolve to the viewfinders of both cameras. Not knowing which camera belongs to Mark and which to our protagonist, the video begins to play. Each camera displays the same timecode information but

gives a distinctly different visual account of the day's activities. The camera viewfinder on the left presents us with imagery of rational and mundane observations of the apartment. We see our camera operator immersed in rational activities—studying and doing chores. Objects in the frame are properly exposed and in focus. By contrast, the viewfinder on the right presents us with a much darker perspective of the day's events. We see canted angles and subjective shots of alcohol bottles, out of focus images of a television cartoon. (Figure 5 & 6).



Figure 5



Figure 6

Based on mouse position, the user can change the position and volume setting for each viewfinder screen. The user options that controlling an entry to different narrative sections are provided through buttons (next, previous, rewind, forward) on each viewfinder. Interacting with these objects allow the user to jump through the story in a decidedly nonlinear manner—examining and re-examining the footage. If the mouse is placed at the center of the work, the viewer can see both screens at the same time and he can hear the sounds from both screens equally.

As the narrative advances and the user interacts and examines the video on each or both viewfinder screen, occasionally the same images appear (Figure 7 & 8) and the user discover that both camera operators are in fact the same person. Each multiple screen represents our protagonist's split personality—his conscious and subconscious state.



Figure 7

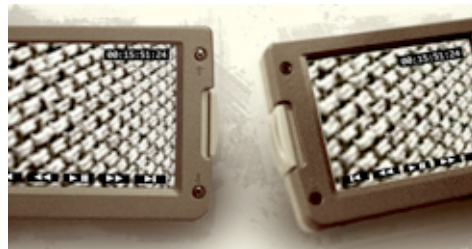


Figure 8

The second student project, by Sabine Koth, is entitled, "The Odds of a Student's Life." Sabine's concept is to tell the story of Ralf and Stephan, two Austrian exchange students and roommates at an unnamed American University. The user is given the perspective of an intruder who enters into their apartment (Figure 9). By interacting with the various objects in the room, the user is able to draw expository information about Ralf and Stephan (Figure 10 & 11). Once they click on the dual monitors, the user is able to discover much more about our characters as recorded footage about Ralf and Stephan begins to play (Figure 12).



Figure 9



Figure 10

On our split screen, each monitor shows the two characters in different rooms, with each character occasionally crossing over screens (Figure 13 & 14)



Figure 11



Figure 12

Buttons on the monitors all the user input to control sound volume, and advance to various narrative plot points (previous, next, forward, rewind) as Ralf and Stephan discover if they have been expelled. The user is given a number of narrative path selections – controlling what the characters should do, which room to go, if they answer the phone. The narrative choices are up to the user, however the narrative resolves with a party—if they are expelled or not (Figure 14).



Figure 13



Figure 14

In each piece Flash Actionscript is controlling the embedded video clips as the user selects and edits their own narrative.

## CONCLUSION

History has shown that the art and craft of storytelling has transcended the varying modes and methods through which audiences are emotionally and intellectually engaged. As new media and new digital tools for manipulating new media change, so will the process of organizing and conveying information to a future audience. Ever-

changing culture will inevitably result in ever-changing forms of cultural expression. As this paper has demonstrated, the theories and process involved in designing interactive narrative draw heavily from fragments of the past in creating exciting new narrative paradigms that have forever changed the relationship between audience and author. The design educator must understand this convergence of narrative modes and changing technology as they prepare future design practitioners in terms of narrative development or perhaps non-narrative structure altogether. As interactive narrative becomes more pervasive, designers must focus more precisely on how users experience an interactive product, rather than assessing how useful or productive a system is from its own perspective. Both narrative development and user experience are directly linked to the engagement of the user. In understanding new ways to connect with that future audience—to entertain, to move, to arouse, to educate—designers must search for those subjective nuances that bind us all.

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