My Storyteller Knows Me: The Challenge of Interactive Narrative

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Introduction:

History suggests that when technological advances become available
at the right price, they become ubiquitous and spin out into other
inventions. In the process they generate new ways of thinking. Over
the last 100 years, technological advance and communication forms
have developed a kinship. Telephone, motion picture camera and
projector, radio and television, Minitel and the Internet, and cellular
phones are some examples of the rapid pace of innovation. As media
becomes digital, we are witnessing a confluence of trends which
invite the invention of new forms. These forms highlight
personalization at all levels of the information and entertainment
spectrum.

How will this technology impact the art of storytelling? Our
storyteller, be she a moviemaker, journalist, or home media
enthusiast, needs to form partnerships with computer programs
which help design and playout the stories we tell. I do not suggest
that linear movies will no longer be made; clearly, the linear form
suits many dramatic stories. However, there are many stories yet to
be told which will take advantage of variable, non-linear playout.
This variability may be responsive to what the audience (usually of
one) wants, knows, or does within a certain framework of their
activity, or may provide a pleasurable moral experience in keeping
with the tradition of cinematic storytelling although with some
deeper engagement. *Aspen* (1979), the surrogate travel experience
designed at the MIT Architecture Machine Group in 1979, offers an
early example of random access media in which the viewer

navigated through photorealistic views of the city by touching the screen or moving a joystick. Today many computer game platforms provide similar active experiences, but are limited in the depth of the moral or intellectual content.

Delivery Trends:

Before looking at specific scenarios, let us review some trends which others have spoken of and reflect on the granularity at which digital delivery might be structured. Our storyteller is less concerned about how bits are shipped, although access to distribution is always at issue, but how much processing can occur and where. It is not of interest to place a story told by means of a semantic network on a distribution channel which has no processing either at the server or at the receiver. Broadly speaking there are four ways to receive bits: mobile, terrestrial, satellite, packaged media. Channel capacity is expanding, however some limits are in sight, for instance in the satellite arena. Both switching and storage capabilities add potential diversity to the viewing palette.
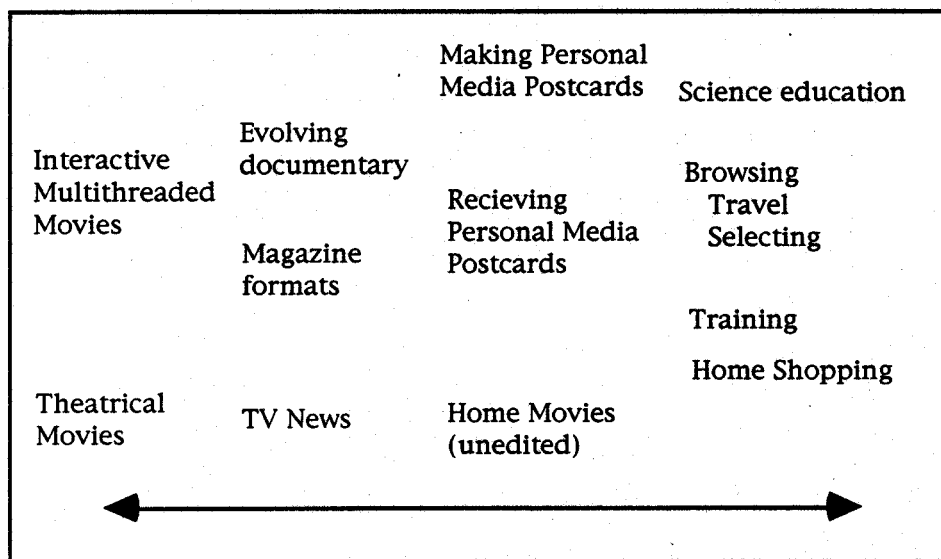
We have not quite arrived at the smart, digital VCR, although that technology is coming. We do have fast graphics processors, 3DO and SGI, and these are beginning to reach the home market. Compression is getting good enough so that light fare -- minimovies -- might be able to be distributed over mobile lines and play out on portable receivers -- which is a good argument for the postcard form which I will return to. Obviously eventually your receiver will be digital, capable of storing, at which time we can make use of some of the processing which is required for browsing databases and constructing visual and audio messages.

Diversity in the communication form:

Over the last ten years we have tested ideas about interactive or non-linear narratives, and here I refer to narrative in the broadest sense of the word, for a range of content and in multiple venues from kiosks to video games to branching theatrical experiences. What we have discovered is that the digital medium challenges the way we think about narrative as well as shifting the ways we structure story to respond to the need for **granularity** and **scaleability**. The medium also challenges us to position the

audience (usually of one) in a new way which makes explicit the "heads in, hands on" activity which they will be engaged in. Despite many examples of what could be done, many critics still face the quandary: can non-linear technology bring us closer to a seamless experience of relevant narrative over which we have some control or is engaging interaction merely a gleam which dreams can capture?

As we look at selective scenarios it will be useful to place them in the context of other applications. The figure below, read from left to right scales applications relative to entertainment or information and bottom to top from passive to active.

		Making Personal Media Postcards	Science education
Interactive Multithreaded Movies	Evolving documentary		Browsing Travel Selecting
	Magazine formats	Recieving Personal Media Postcards	
			Training
			Home Shopping
Theatrical Movies	TV News	Home Movies (unedited)	

Principles and Examples

The pool of script writers and young directors ready to make fictional narratives which invite user participation continues to grow. A key idea in the creation of fiction is the idea of Multithreaded narratives. Narratives in which multiple stories and characters are intertwined and the viewer can cross into and out of the threads. Recently we have produced three experimental short narratives which illustrate different ideas for variable playout and user interaction. *Train of Thought* by Mark Halliday tells the story of a couple who are faced with separating as a result of their circumstances. In this movie, both characters comment on their relationship while alone. The central playout shows scenes in which they are together or dream of being together. Filters are used to select a single establishing scene, scene of conflict, scene of flight,

scene of discovery and closing scene, from several possible scenes for each category. The viewer interacts by seeing more of the personal scenes with one or the other character. The story is simple but compelling and yet we are able to tell it with many variations.

Using a similar computational playout engine, Ryan Evans is just completing *Just One Catch.* Again, this is a fictional piece which can play out with many variations. In the story, a young man is eating his lunch on a park bench. Many people stop to talk with him including a homeless person, a mother, a bum. In some cases they help him eat his lunch. As he is finishing lunch, a skateboarder comes by and steals his movie camera. The movie ends with a chase scene. The audience interacts by asking for more dialog or more action. In each section of the computational playout, many clips are available. By setting up the correct logging and filtering structures, we can insure that the machine maintains continuity of action and point of view. In a third narrative, *The Files of Dr. Bern,* Lee Morgenroth is exploring how the device of interaction affects the suspension of disbelief. In this movie, the viewer uncovers a split personality while caught in an application which appears to be the Macintosh finder. The idea here is to situate the observer in a familiar interface which suggests active manipulation. The viewer must piece together the plot as he examines various files. In all three of these movies the issue of how we can structure transparent interaction which does not interfere with the story is an essential focus of the research.

Because my background is in documentary, the content for many of our prototypes relates to news, magazines, and service oriented information. Perhaps it is in these fields that personalized delivery will have the richest impact. For instance, imagine the idea of an evolving documentary in which news as well as information about a situation was collected on a file server. In a current exploration, Gilberte Houbart explores how a user might program a smart VCR to go out and search for content about the Gulf War. As in our narrative explorations, we need to have a multithreaded narrative; that is, we need to be able to see this story from multiple points of view. In this case, as we are designing for television news content, we want to give the user the option to allot time and to weight story characteristics. A story plays out in a linear fashion; however, we would like to have the system suggest when other views are available. The key to success in this case is to be able to **scale** the content.

The machine must know quite a lot about the content -- chronology, importance, characters -- and have a coherent, dynamically configurable story template in order to playout a coherent story. This project is being developed under the auspices of the News in the Future program at the Media Lab, and therefore brings us in contact with many journalists. One important issue for the future involves the type of tools available to the journalist which will allow them to attach a machine-readable "story concept" to their footage as they file it. Returning to the user, we feel that a smart VCR will have many modes of allowing you to fast-forward through content as well as being able to access a deeper story dynamically.

Browsing is becoming an art, a style of getting information, and a method for perusing options. In several other applications we are working with ideas for direct browsing of travel databases. Travel takes its cues from news and information services but it also can be high entertainment. In travel, because of the extensive possibilities, we are looking at ways to build analogies which gain information about user preferences. Once again scaleability and adaptability of playout is a key to personalization.

While fiction works tends to require the highest possible resolution and the most structured interactions, more informal types of media communication also become popular if the price is right. Postcards are my personal favorite! There are over 14 million camcorders in the US alone but no home edit system. My mother, who has a home video camera, would love to select her favorite shots of a trip and send them to her children, even if it is more expensive that the post. The real issue here is the inappropriateness of the linear format. My mother should not be obliged to become an expert editor (at 80, she builds community oriented databases!) in order to send a postcard to me. For informal manipulation, we recently built a video capture utility which is novel and effective. It is linked to an application which allows you to easily arrange movie clips in a collage framework. Sending a personal collage from this application should be as easy as dialing a phone number! In some sense I believe that this is the ultimate random access application.

Conclusion:

These applications suggest directions in which we are headed with random access media. Representation of content and filtering are still difficult both for the computer hacker and for the moviemaker. On the other hand, we have made enormous progress since I made my first interactive documentary in the mid 1980's. The progress is heartening because the methodology is extensible. Now we need to make the tools more pliable but more importantly we need to create for some large-scale distribution system.