# FROM CINEMATIC JOURNALISM TO HYPERMEDIA

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Prepared for "Optical Technologies: New Horizons in Information Processing" Worcester State College, November 28, 1988

## INTRODUCTION

When I consider what I am producing now and what I might like to produce 10 years from now, I am fairly optimistic. Recent advances in consumer video equipment, the feeling that digital video is "just around the corner," and the speed with which almost anyone can learn to use a Macintosh mark a considerable distance traveled; only 19 years ago, I chose to tote a black-and-white video camera and a 30 pound reel-to-reel video recorder around to make real-life journals, which even when they gained the "most-wanted" stamp of approval could not be broadcast without twisting a video engineer's bottom line.

The marriage of video to computational technology began around 1964 with the development of frame-accurate, repeatable video editing systems. This technology, emulated in the emerging multimedia systems, allowed video editors to make, manipulate and save lists of cinematic footage to memory. Of course, the job of managing these lists grows more complex as we add more media which must be synchronized in playback.

While list management technology -- along with word processors -- are common fare for cinematic journalists today, the closed architectures which populate the video industry constrain as much as they enhance the future potential of cinematic journalism. This is in part an economic and in part a sociological phenomenon.

Recently I visited the CNN News Room and Archive in Atlanta. At the front of the main room, data entry personnel log footage from each of the many live feeds as it is recorded, Towards the back of the news area, journalists have access to a circle of Macintosh computers on which they can easily update their narrative tracks. Five days after any feed is recorded, the original tapes are removed from the newsroom and a more detailed log is entered according to the archival indexing scheme. What was most astonishing to me was the amount of individual energy which is still required at every stage of the storymaking process, particularly in retrieving archival footage. Who knew that the red dress Kitty Dukakis wore in March '88 would be critical to a story run in August '88?

Optical storage technologies in and of themselves do not give us any particular leg up. If anything, they require that we be smarter and more inventive both in our creative

formulations and in our ability to manage information. Nowhere is this more apparent than in journalistic endeavors. As more and more of our history is recorded in picture and sound, our ability to both access old information and to develop new, more entertaining, interesting. and informative structures is challenged by our ability to apply nascent information theory.

## BACKGROUND

Assuming for the moment that optical technologies will indeed alter cinematic journalism, we need to examine the confluence of ideas from which this new breed of media will grow.

The desire to record real-life scenarios began at the advent of film with the work of Lumiere. While Vertov and Flaherty pushed the vocabulary of documentary movie through the silent era, the advent of sound had little affect on the genre until the development of portable synchronous sound equipment in the early sixties. Within a year after crystal sync technology became available (initially in watches), filmmakers in America, France and Canada were making a dramatically new kind of cinematic experience. These stories, assembled out of "what took place in the presence of camera and sound recording equipment when the journalists involved decided to record," required that the journalists involved "sniff" out a story and once they found one allow it to unfold in front of them. As Robert Drew of Time-Life said upon seeing the Omnibus program "Toby and the Tall Corn," (the story of a mid-west traveling tent show) "It was just like being there."

Sadly, television journalism today does not construct such artful windows onto unexperienced worlds. Rather it tells the audience what to think, either as quickly as possible or based on some assumption about what its sponsors think the largest percentage of the audience will listen to.

Digital video technologies will, without question, alter distribution patterns; changing distribution will almost inevitably lead to new economic structures, particularly for journalistic endeavors. At one end of the spectrum we have the current controversy over high-definition television; as a journalist, I am not much interested in hauling around cumbersome equipment, so I will let others worry about what format we should adopt. At the other end of the spectrum. rapid advances are being made in developing compression algorithms which, in the not two distant future, will allow 2 hours of digital movies to be recorded on a 5" CD or 2 hours of digital movies to be downloaded into an active buffer in consumer televisions in a matter of a few seconds.

Clearly once the movie data is digital, it can be easily combined with any other digital information. Perhaps less obvious, but possibly more powerful, is the fact that we can extract information from or alter information in the digital picture itself. Proceed in believing what you have seen with caution!

The ability to store full-motion video in digital form along with other data, and the ability to quickly access multimedia segments, leads us to the concept of "movie banks". I use "movie bank" as a metaphor for the future archive of cinematic journalism. Current multimedia or hypermedia projects which use optical videodiscs to store full-motion video in its analog form are the forerunners or candidates for "movie banks." The most critical issue for "movie banks" is one of meaning. What we would like, of course, is to build systems which offer responsibly delivered, personalized stories in the richest possible cinematic language. Obvious models for this kind of exploration include hypertext systems, natural language processing research and theory, and work in artificial intelligence.

The propulsion of movies into the digital domain also suggests new aesthetic forms for cinematic journalism. These forms may also have ancestors such as the magazine. Optical technologies in conjunction with consumer recording technology may indeed present the first opportunity for independents to self -distribute. Hopefully this will encourage small, diverse publications on a wide-variety of topics.

## MOVIES AS A RESOURCE

What do we mean when we talk about "non-linear" or "interactive" movies? Traditionally, movies have been linear, and even branched structures are viewed in linear time. Interaction has the burden of interrupting cinematic reverie unless we give the viewer a role, such as "detective."

The notion of "movie bank" will mean different things depending on its scale, what models we have developed for information retrieval, how sensitively the machine can orchestrate meaning, and what tools we can offer the user. We are developing a "movie bank" prototype around the cinematic case study "City in Transition: New Orleans 1983-1986." While progress is slow on the software side of things, user enthusiasm has been heartening.

Our first intention in releasing this project on videodisc was to give viewers as much information as we, the filmmakers, acquired while making the film, and more. We began the story by asking "how does a city change?" We discovered that 2 1/2 miles of riverfront in downtown New Orleans were about to be rapidly developed. The 1984 Louisiana World's Fair and Exposition was an active catalyst in the development scheme. When we began filming, New Orleans appeared to be swimming in cash flow. We could not believe this would last. It didn't. Meanwhile, as we looked around to identify the decision-makers, we discovered that they were a complex and varied group: developers, architects, city officials, residents, businessmen etc. Each had a public and a private agenda; every interaction led us to a new stack of documents and a new set of conversations, most of which we had to absorb before deciding what we should film next.

The interactive implementation of this project is being developed as a curriculum in cooperation with MIT's Project Athena. T he system configuration includes a MicroVAX II with a Parallax 1280 videographics board running Berkeley UNIX and X-windows. In

our newest implementation we are running six videodisc players through a vertical interval switcher.

The user requirements include:

1) access to information in as timely, coherent and meaningful a way as possible;

2) the ability to tag and return to specific sections of film;

3) the ability to excerpt and edit sections of the film;

4) the ability to play the sections of film from their own workspace/emacs document;

5) the ability to excerpt on-line data from both the database and from flat files to their workspace;

6) the ability to annotate and link text to video segments.

The videotape shows some of the tools as they were prototyped under X-I 0, in particular the video shuttle control and storyboard module. These were prototype modules to explore aspects of the toolset. The new application screen will offer generic tools including shuttle, editing, and database query which are accessible to the user at all times.

The data structures have been the trickiest component of the scheme. The problems are numerous. First, users must be able to redefine segments for their own edits; however, these segments must still reference back to the master data set. Users will frequently update their edits or use the same segment in two sequences. Users may want to know any number of things about a scene, character, date, location, action, event, issue, or references. We must provide the user with the simplest possible method for indicating preference for particular information; we must be able to access this information quickly, and display it clearly. We must be able to generate new playlists based on user direction, although, like most hypertext systems, the user may not know how or what to ask for. Finally, we need to be able to build models and construct these playlists as cinematically as possible using a combination of information in the database and symbolic descriptions.

The most appalling aspect of building a database of this complexity is the arduous task of data-entry. Digital movies may eventually offer some relief; until then large projects such as this one will be limited.

## ELASTIC MAGAZINES

In closing, I would like to briefly describe an experimental production which we are close to completing. The project was developed by an advanced production class to simulate production techniques for specialty magazine publications. The project, Elastic Charles, combines still frames, time-lapse, mini-movies, interviews, animations, digital audio, text and graphics. The live video originated on video-8; the time-lapse on super-8.

The pre-mastered video edit is on 1" videotape. The check optical videodisc cost $200 plus shipping to master. The magazine will be viewed using a Mac II computer with a ColorSpace videographics board.

Every member of the class began as a media journalist, and were asked to research some aspect of the "Ecology of the Charles." Within 24 hours of starting, it was clear that we needed a Publisher, a Managing Editor, an Interface Editor, a Digital Effects editor, a Line Editor and several special teams charged with coordinating particular aspects of the publication. These positions were assigned based on skills, commitment and, in some cases, personality.

The magazine will use time-lapse up the river as a spine. A wide range of interactions are being implemented which emulate dynamic or associative linking. Not all the stories are polished -some students had never shot video before and we had to go to press, But it has been great fun to make, and will hopefully entertain most audiences. In concept, it is a throw-away -- the opposite end of the spectrum from the movie bank, a different approach to the future of new media.