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ABSTRACT
          This document contains 102 one-page conference
demonstrations/posters of individual research in the use of
multimedia and hypermedia in education. Teaching and learning
strategies and styles are addressed; multimedia applications for
cooperative learning, problem solving and decision making are
related. The uses of object-oriented modelling, authoring systems,
intelligent tutoring systems, computerized testing, computer
simulations, image processing and video conferencing for educational
purposes are described. Discussion in the posters also includes the
use of interactive systems for faculty development and for distance
education. Other topics include microcomputers as alternative
communication aids, information retrieval, library instruction,
programming languages and computer system design. (AEF)

Intelligent Strategies For The Presentation And Interpretation Of Video In Intelligent Tutoring Systems.

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Multimedia systems can now have cheap video, and Multimedia Authoring Systems are being used for creating Intelligent Tutoring Systems (ITS). Thus interactive film/video is now available as a resource for ITS designers. Film however must be used carefully because film clips take on new meanings when juxtaposed with other clips. D. Kuleshov in 1920 conducted an experiment (from Pudovkin (1958)) which highlights several aspects of film clip juxtaposition. Visualise five clips of film...

1. A young man walks from left to right. 2. A woman walks from right to left. 3. They meet and shake hands. The young man points. 4. A large white building is shown, with a broad flight of steps. 5. The two ascend the steps.

"The pieces, separately shot, were assembled in the order given and projected upon the screen. The spectator was presented with the pieces thus joined as one clear, uninterrupted action; a meeting of two young people, an invitation to a nearby house, and an entry into it. Every single piece, however, had been shot in a different place; for example, the young man near the G.U.M. building, the woman near Gogol's monument, the handshake near the Bolshoi Teatr, the white house came out of an American picture (it was, in fact, The White House), and the ascent of the steps was made at St. Saviour's Cathedral. What happened as a result? Though the shooting had been done in varied locations the spectator perceived the scene as a whole."

It is investigation of film phenomena like this that leads me to formal rules for film editing.

The strategies (from the title) consist of a film structure, an event structure and a set of rules for translating the event structure into the film structure. This approach was first described by Carroll (1980), however I have taken his embryonic film grammar and extended it with particular relevance to film being presented as part of an ITS or any Multimedia Application. I feel Carroll experienced problems with his film grammar because he scoped it too widely. By narrowing a grammar's application area I feel it becomes more relevant. A fragment is shown below.

1. Scene	$\Longrightarrow$	Scene*
2. Scene	$\Longrightarrow$	Establishing Shot + Detail Shot*
3. Scene	$\Longrightarrow$	Detail Shot* + Revealing Shot
4. Establishing Shot	$\Longrightarrow$	Extreme Long Shot I Long Shot
5. Revealing Shot	$\Longrightarrow$	Extreme Long Shot I Long Shot
6. Detail Shot	$\Longrightarrow$	Detail Shot + Scene + Detail Shot

(* meaning one or more , + meaning concatenation, and I meaning exclusive-or)

The problem with such a notation for expressing the structure of film is that the structure is dependent on what you want to communicate. Thus, on the whole, rule 2 would be used for scene structure, but rule 3 used when we want to bring the viewer to a particular point then reveal some extra information which shows them the actual conclusion. Such strategic decisions would be made by the ITS. The ultimate aim is to amalgamate this grammar with a knowledge base describing the content of some film (see Parkes (1989)) into an ITS which dynamically edits the film for presenting a given concept and parses user input in the same manner. Research is currently underway at Lancaster into this problem.

References

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