

A System to Compose Movies for Cross-Cultural Storytelling: Textable Movie

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Abstract. This paper presents *Textable Movie*, an open-ended interface that allows anyone to become "video-jockey." In the framework of computational storytelling, Textable Movie promotes the idea of maker controlled media and can be contrasted to automatic presentation systems. Its graphical interface takes text as input and allows users to improvise a movie in real-time based on the content of what they are writing. Media segments are selected according to how the users label their personal audio and video database. As the user types in a story, the media segments appear on the screen, connecting writers to their past experiences and inviting further story-telling. By improvising movie-stories created from their personal video database and by suddenly being projected into someone else's video database during the same story, young adults are challenged in their beliefs about other communities.

1 Introduction

We imagine a world in which children play, create and exchange visual narratives with ease and transparency. Textable Movie explores a graphical language and interface that can invite storytellers of any age to compose and visualize movies, images and sound environments while writing a story; the system self-selects and edits images in real time based on textual input of the teller. While Textable Movie was first inspired by an application for annotating images [2], during pilot studies with teenagers, we have found that its power is maximized when it becomes a presentation system. Makers first create their own media, e.g. pictures, sounds, movie segments, based on stories they wish to recall; they then use a text driven presentation mode which allows the maker to shape a story fluidly while writing a story. By creating a movie-editing paradigm in which text leads and image follows, Textable Movie provides a very natural, fun and immediate interface to story-making. This approach creates a symbiotic relationship between the author's imagination and the stories that she wishes to tell and supports a diverse set of activities that foster narrative co-construction.

2 Application Domain

In proposing a text-led interaction and presentation system, we redress a limitation of traditional editing and draw on observation and previous research that relates verbal and image exploration [1, 2]. In traditional "random access" video editing systems, the interaction paradigm is a timeline; the objective is to make an immutable "final" cut of a movie. The author can only see the whole once she renders the time line. The audience sees only the final version of the object. How can we turn this paradigm on its head? How can we bring the imagination of the projectionist or the audience in closer synchronicity with the "movie" output? Ironically, the very nature of digital architecture begs us to make a shift from final object to process. Why should we treat a collection of digital clips stored in a database with the rules that shaped the continuous material substrate of celluloid? Why not call chunks from the database in real time? When images or movie chunks are stored, they are generally identified with digital "metadata" including a name. Can we take advantage of the naming process?

Previous research and observation together lead to the idea that text could drive a "projection paradigm" where the projection is sequenced by the projectionist/viewer/maker in viewing time through verbal input. Early testing with this paradigm using footage of the application author uncovered a basic limitation: how would the projectionist/viewer know what words to use? This resulted in the idea that the players -- be they a small group focusing on an authored project or casual visitors to a waiting space -- submit and name their own images. The Textable Movie application thus came to serve as a platform for multiple video-oriented interactions along the lines of the play described in the scenario. By encouraging associative thinking in the verbal domain, the application leads participants into a new realm of story making. Participant "projectionists" use Textable Movie to drive a movie experience made up of the story text and the association between particular words in the text and video clips stored in the database.

Textable Movie [9] retrieves movie segments and sounds in a specified database, from analyzing textual input. It loads and plays them in real time while the story is being typed. Consequently, a novel movie gets created and generated in a very transparent, and easy manner. The simplicity of use and immediate response can help the user/projectionist focus on the story rather than on the technical concerns of editing. The system can easily be connected to any personal movie database. For example, the following short keyword sequence [forest, nature, tree, wood, leaves, Yosemite] could describe a personal 10-second video clip of the Yosemite park, called "forest.mov" The personal labelling is important as it allows the users to give the medium their own meaning. A series of simple commands add instant manipulations of the movie being played (see Figure 1.). These commands are typed directly in the text, and by deleting the text-command, the effect disappears, e.g. to zoom: [closeup], to change the speed rate [faster], to alter the overall coloration of the image [winter].



Fig. 1. Video segments play instantly following the story typed. A set of commands modify in real-time the video segments, e.g. [closeup], [winter].

3 Contribution to the Digital Storytelling Community

We explore a video-based interface that empowers people in discovering new ideas, and that involves them in challenging their assumptions about their surrounding environment during storytelling. While previous systems have been built for dynamic video sequence generation by secondary image selection [4], or textual specification [3], Textable Movie provides sequencing by textual and spoken text input. Textable Movie is a natural language system for a spontaneous approach to the interface. Using language as an interface allows a natural approach to story building and play for both the person who is trying to understand the world and for the person who engages in improvisational storytelling with someone else using the system.

We play, learn and exchange ideas about our identity using stories. For many centuries, the letter has been a dominant form, from family letters to pen pals. Today communications technology, with its spectrum of media potential, expands the resources we have at our disposal for exploring and sharing identity. Therefore we propose that such real-time movie-making devices could have potential in cross-cultural exploration, investigating multi-dimensional approaches to express and exchange identity. Can young adults, by sharing images and stories across borders, gain a deeper sense into cultural identity? Textable Movie is a tool that might engage people in relationships where they exchange and transfer a sense of culture through play, collaboration, and storytelling. Cultural as well as personal production of media can be shared over media spaces as a means of understanding relationships with others, their communities, their rules, their habits, and their references to the world. With new technologies, we are moving away from the letter-form into a creative and collaborative world in which images and sounds can mix with local language. Textable Movie is a movie-making device to engage people in exploring multi-dimensional approaches to expressing and exchanging identity.

In a world in which media is everywhere, media creation can provide a means of exploring self-identity both through individual sharing and group construction of media spaces. Constructionists have suggested that users could benefit from systems that support self-expression rather than create content for the user. With Textable Movie, our focus is to empower people to express what they think is meaningful in their culture, and what is optimally challenging to them. We base this research on the body of work regarding digital stories for documenting culture. A network of media

could allow users to master the art of digital media for their own expression, developing powerful ideas through the presentation of interactive videos representing their own lives for the purposes of cross-cultural exchange. This would allow remote peers to reflect on their assumptions about other cultures through experiencing these videos, and instructive installations.

4 User Study

While our interface paradigm is specific, it was inspired by the need to make visual storytelling more accessible, engaging, and powerful for young people [7]. In that interest, we have designed an international workshop that focuses on visual storytelling using Textable Movie. Teenagers participating in these workshops go through the process of putting together a piece by first storyboarding, then shooting, editing, and projecting a video-story. We have started to plan a global strategy, which will allow us to compare how teenagers use this system across cultures. We observed teenagers create their own video database about Dublin.

Textable Movie acts as a projection device for a storyteller. It is specifically a tool for improvisational storytelling, and not a regular editing tool. It is based on the theory that people learn by constructing their knowledge [6], and that people are engaged in the process because they have fun, because they are challenged, and because they expect an audience for their creation. The extension of the constructionist field we explore comes from the Community Art notion of « challenging » the audience by the object created. In this workshop, we observe how teenagers can be empowered in the sense of involving them in creating pieces to challenge their recipient about their assumptions. These assumptions can be about their environment, their identities, and also their culture. The core issue of the research is to focus on storytelling in order to bring to light contradictions and resolve them. We are particularly working with teenagers because they are in an intermediate stage where they are questioning the contradictions in their environment.

4.1 Methodology

A one-week user study has been held at the Ark, Dublin, in Ireland with 11 teenagers. We divided the week into different activities: each day, the teenagers experimented with our video tools for 3-4 hours. Around ten adult mentors interacted with the teens, helping them to use the video equipment and Textable Movie, and making sure each teenager explored the equipment, and understood its features. We have first familiarized the teenagers with the traditional methods of movie making and documentary making. The teenagers had a hands-on introduction to the video equipment. We have introduced the notion of new ways of movie making by assembling video clips in a specific order, and new forms of stories by remixing them together. We have quickly shown Textable Movie in use for such purposes. They first created a storyboard telling a story about the building in which they were in. They filmed their own movie based on it, and used the Apple software iMovie to assemble their movies.

4.2 Results

The teenagers have segmented their own movie, creating a palette of keywords to explore their movie. The immediate response from the system made it comparable to a video game, and not an editing tool. The teenagers were excited to “play” with Textable Movie, and wanted more videos about themselves. They were thinking about ways to connect their facial expressions to Textable Movie. We ended up with a palette of heads and the names of the teenagers as keywords. They wanted to redo more of their own footage for the system. We have explained the intent of the workshop as a way for teenagers from other countries to navigate through their life. To this end, we have asked the participants to shoot in the city as a reporter of their environment. They shoot elements presenting their city and what they liked or disliked in it, e.g. mobile phone conversations, couples kissing, fights. They watched their video, and decide how they will cut it for the interactive projection. For instance, one of the editor said : *“Oh, this is you here! We could make it so that when “Tom Cruise” is mentioned during the projection, then you appear on the screen!”*. One participant was designated to be the projectionist creating the city story using Textable Movie. However, all the others were ‘shouting’ the keywords they wanted him to type in order to have surprising footage. We have found that they exclusively used Textable Movie as a tool to show others short stories in real-time and make surprise effects by creatively associating keywords to visuals. They consistently gravitated towards iMovie and its timeline to create an edited movie for export. They never used the functionality of Textable Movie to create a whole movie out of the story segments. We can deduce that the specific utility of Textable Movie is to provide a response to the user input in real-time and then act as a projection device. A more quantitative analysis could support these results; however, we found very informative that, in a one week workshop in which the teenagers felt challenged by the activities, all of them have looked at Textable Movie as a real time projection device, and each has pushed the limits of its functionality, e.g. by making surprise effects. Thus, we have found it important in imagining a set of video editing tools that this set should include a regular editing tool, e.g. iMovie, as well as an interactive projection tool, e.g. Textable Movie. We finally observed that the teenagers were constantly into creating specific content for their audience, and were excited about sharing their database with other countries. From the beginning, one of our goals for this tool was to encourage teenagers from around the world to share views of their world with each other.

5 Future Work

We found that Textable Movie is a natural tool for improvisation and projecting audio-visuals while telling a story, and we have also begun a new multi-cultural database of teenagers in their environment. We have prepared the setup for use in different countries where equivalent workshops will take place, and the cooperative results will be a permanent kiosk to navigate among other’s culture. In its future versions,

our system will be networked, and used as a multimedia tool to reflect into someone else's culture. Our plans include a further analysis of the new possibilities created for participants of different countries who share a database of clips from different places, installed in the form of a kiosk in children's museums internationally. Textable Movie will also be part of the worldwide activities of Pangaea [5] that aim to let children around the world feel "bonds" personally.

6 Conclusion

In this paper we argued that there is a need for an alternative framework for video editing and storytelling. The need is motivated by the desire to reproduce the playful improvisational environment of child storytelling. We have outlined the specifications of Textable Movie during a workshop. It informed us that Textable Movie engages teenagers to become video-jockey by allowing projection of media during storytelling in front of an audience. The power and flexibility of Textable Movie can be evaluated in part based on applications that we have created which we did not initially envision. For instance, Textable Game extends the concept to the realm of video games. This application aims to engage teenagers in building their own games, e.g. action games, exploration games, mystery games, using their own footage and sounds, and allowing them to create their own rules and scenarios.

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