

CO-AUTHORING AND USER INTERACTION IN DIGITAL STORYTELLING. A CASE STUDY

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Abstract

This paper examines two levels of user engagement in digital storytelling: co-authoring during the production of multimedia content and user interaction during the visualization of the narrative. It introduces the case study of Babel, a new media framework consisting of a web platform and an interactive installation. The web platform facilitates the first level of user engagement. It provides an environment that encourages multiple authors to produce and contribute narrative fragments to a shared database. The second level of user engagement is achieved through the interactive installation, which forges interactions between viewers and the available content, allowing the dynamic exploration and articulation of the narrative. During both levels of engagement, the audience is prompted to abandon the role of passive consumer and to become either a producer of digital content or an active viewer that influences the projected narrative. It also discusses cases of multi-author, multi-perspectival and interactive narratives in 'old' media art and the added value of new media in creating new opportunities for more decentralized and non-hierarchical models of storytelling production.

Keywords: *computer vision interface, database, digital storytelling, interactive installation, new media framework, web platform*

1. Babel new media framework

Babel is a new media framework developed to support the production and dynamic visualization of multi-author and multi-perspectival narratives. It forges user engagement in two stages of digital storytelling: during the production of multimedia content and during its visualization. The infrastructure of the framework is modular and extensible. It consists of a web platform and an interactive installation (Figure 1).



Figure 1. Babel's interactive installation

1.1 Web platform

Babel's web platform is an online environment that allows multiple authors to produce and contribute video content. The contributed narrative fragments are different versions of a commonly shared script. The proposed script was based on the text *Serially Killed* written by the writer Kostas Kostakos (2008).

The script was temporally fragmented into scenes and every contributing author created a new version of a chosen scene/character pair.

The web platform provided an interface for uploading multimedia files to a shared database. This user-generated content was annotated with a set of metadata and was attributed with a creative commons license that permitted future reuse and remix.N

o restrictions were set to the authors regarding the context of the narrative, the semantics and aesthetics of the videos or the tools and media employed. This way, a wide variety of versions emerged (Figure 2).



Figure 2. Screenshots of some of the contributed videos

The contributed content was visualized through the interactive installation described in the next section.

1.2 Interactive installation

Babel's interactive installation was developed to provide a dynamic visualization of the narrative and allow user interaction. The interface facilitated users to explore the contributed versions, choose some of them and recompose them in real-time. The selected videos were retrieved dynamically from the database, according to the user interaction, and were projected on surfaces distributed around the installation space. Each character of the story was projected on a distinct projection surface. The available versions for every scene/character pair were virtually placed on different layers with augmenting depth, occupying a virtual axis perpendicular to each projection surface. The scenes were successive, and the narrative followed an infinite loop.

The interaction was facilitated through a computer vision interface activated with the light of a torch. By directing the light towards the screen, the user created a virtual window to the next layer. In a circular area around the light, a part of the next version was revealed, while at the rest of the screen the current version was still projected (Figure 3). While the user kept pointing to the screen with the torch, the diameter of the virtual window gradually increased until it occupied the whole screen (Antonopoulou, 2017).

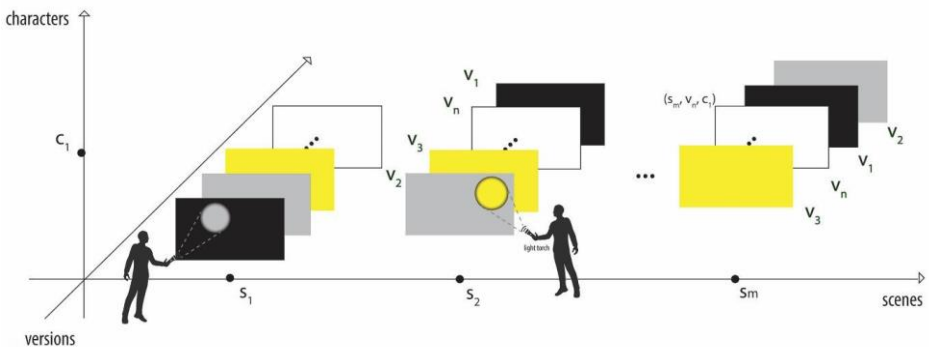


Figure 3. The interactive interface of the installation

2. Multi-author, multi-perspectival narratives

“There are as many versions of Hamlet as there are directors” (Rieser, 2002).

The involvement of multiple agents (authors and viewers) in the articulation of the narrative provides multiple perspectives of the narrated events resulting in a panoramic view of the events. The narration of an event is influenced by parameters related to the narrator and the context of the narration. These parameters include the conscious or unconscious influence of personal experiences, social background, ethics, desires and intentions towards the audience. The narration is also influenced by the media used to

transmit the narration (the use of language, the tone and style, the aesthetics of video-narratives). Multi-perspectival narratives provide different viewpoints of the events and shed light on the parameters that affect the narration.

In the context of 'old' media art -such as painting, literature, theatre, cinema- various artists explored the parameters that affect a narration and the value of multi-perspectival viewpoints.

Söke Dinkla (2002) underlines the political implication of a single perspective in painting: The central perspective, defined by a vanishing point assumes a unique correct point of view and a unique ideal observer, the monarch. A 'democratization' of the observer's point of view was achieved with the panorama, which abolished the central perspective and could be observed from a variety of perspectives (Dinkla, 2002). Raymond Queneau (1947), member of the Oulipo group, in his work *Exercises in style* recounts ninety-nine times the same inconsequential event, in which a narrator witnesses a minor altercation between two men in a bus. Every version of this narrative is unique in terms of tone and style. In the film *Rashomon* (1950), Akira Kurosawa explores the proliferation of narratives, deriving from the intentional filtering of an event by several narrators. During the film, a crime and its aftermath are recalled by four narrators, who provide alternative, self-serving and contradictory versions of the incident. Similarly, the classical texts can achieve new meanings when they are narrated through the perspective of secondary characters. For example, in the novel *Rosencrantz and Guildenstern Are Dead* by Tom Stoppard (1967), two minor characters of Shakespeare's *Hamlet*, the courtiers Rosencrantz and Guildenstern, narrate their personal perspective of the original events. Moreover, multiple possibilities emerge when a text is removed from its original context and placed into a new one, such as the narration of a classic, romantic love-story through a feministic perspective (Zizek, 2005). Bertolt Brecht (1950) also discusses the conscious or unconscious alteration of meaning resulting from the social background of the narrator. In his *Street Scene*, the narration of an accident by multiple eye-witnesses serves as a basic model for the epic theater. The theatre of the oppressed, invented by Augusto Boal, takes the Brechtian *Street Scene* analysis a step further. The Forum theatre, more than exploring varying interpretations of an event, it proposes different actions according to each interpretation that alter the unfolding of the narration. Moreover, the varying interpretations and actions are not only suggested by members of the audience but also interpreted by them (Boal, 1985). This way, the theatre of the oppressed can be considered as a precursor of embodied interactive storytelling where viewers affect the outcome of a narrative according to their actions.

3. New media technologies and open practices supporting digital storytelling production

Broad access to multimedia production and distribution means gradually lead to a proliferation of narratives (Lipovetsky & Serroy, 2007). The decreasing cost of recording technologies, together with their embedment into familiar mobile devices, make them affordable to a wider public and extend their use at an everyday basis. Video

editing and post-production processes are facilitated by opensource software, which often includes features similar to those of professional tools. Moreover, authors have free access to web platforms, that allow them to upload and distribute their work, offering the opportunity to reach a huge audience in short time (Lipovetsky & Serroy, 2007). These changes in the conditions of cultural production create a shift of the vertical model of media communication towards a decentralized, horizontal model, where a considerable amount of content is generated and diffused beyond the traditional centers of information control (Benkler, 2006; Lipovetsky & Serroy, 2007). Simultaneously, a new generation of users emerges, who are no longer passive consumers of content generated by multimedia experts, but they participate in the production of such content. This emancipated generation of *prosumers* (producers/consumers) are users that generate their own content and programs, exchange them amongst themselves and distribute them freely online (Weibel, 2006; Toffler, 1981; Lipovetsky & Serroy, 2007). The legal infrastructure of commons-oriented licenses further forges reuse and modification of resources.

On the other hand, embedded interaction and ubiquitous computing allow the distribution of computation functionality into common, everyday objects and the environment. The functionality of the objects is augmented while their user interface remains unaltered. Thus, users with limited technical skills can interact naturally and transparently with sophisticated computational systems. Finally, the reappropriation of everyday objects through a DIY (Do-It- Yourself)/DIWO (Do-It-With-Others) approach, together with the expansion of Free/Libre and Open Source Software (FLOSS)/Open Source Hardware (OSHW) render the artistic creation affordable and accessible to larger audiences.

Conclusions

This paper presented Babel as a case study of a framework for co-authoring and user interaction in the field of digital storytelling. The infrastructure of the framework included a web platform and an interactive installation, both forging users to abandon the role of passive consumers and to become either video prosumers (producers/consumers) or active viewers (interactors).

It was also argued that user involvement in interactive storytelling transforms the narrative experience. Multi-perspectival narratives reveal the parameters that deliberately, or not, grant new meanings to the narration and allow viewers to articulate a more panoramic and democratized viewpoint of the narrated events. The contribution of multiple authors to the production of the audiovisual material questions the conventional role of the director (as in the *cinema d'auteur*) and proposes a more decentralized model of collective direction. In this model, the dynamic unfolding of the narrative is a result of a dialogue between the authors and the viewers, where every agent contributes to the semantics and aesthetics of the work, but no one can dominate and predetermine them.

Although multi-author and interactive narratives exist in 'old' media art, new media technologies create new opportunities for user participation and interaction in the field

of storytelling. With the advance of interactive technologies, the implicit participation of the viewer becomes explicit. New media create interactive story spaces where users explore and establish links between a number of related narratives, experience a single narrative from various viewpoints (Weinbren, 2003), or articulate custom trajectories by selecting and combining elements from a database (Manovich, 2001).

The challenge of the employment of new media lays at the construction of open infrastructures that support decentralized and democratized models of production and presentation of digital narratives. These infrastructures contribute to the creation of the conditions that forge the active involvement of an increasing number of users at all stages of the creative process. They are apparatuses that lead consumers to production, in short, that are capable of making “co-workers out of readers or spectators” (Benjamin, 1970).

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