genieBottles: An Interactive Narrative in Bottles

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The genieBottles system presents a story that is told by three genies who live in glass bottles. When a bottle is opened, the genie contained inside is released and begins to talk to the user. If several genies are released at once, they converse with each other. The physical bottles can be seen as graspable "containers" and "controls" for the digital story information, and wireless tag sensing technology is used to determine their open and closed states. This interface was first used in the musicBottles project, in which sets of glass bottles were filled with musical trios.[1] The genieBottles project explores the application of the bottle interface to the interactive storytelling.

The Application

Storytelling is an important part of human culture, both in entertainment and in education. We find great pleasure in experiencing good stories, and they enable us to learn about our society and history. By creating stories, we structure our perceptions and understandings of the world in a form that can be passed on to others. Over the past 20 years, the increasing accessibility and stability of digital technology has enabled new computational approaches to storytelling. We felt that by applying a tangible interface to the field of interactive narratives, we could provide stories with a means of escaping from the computer box and into our physical environment. Our genieBottles provide an engaging interactive story experience in which the audience can go beyond the visual and auditory senses, and make better use of their sense of touch.

Story Content and Narrative Model

The genieBottles story is based on the lives of three genies (Junar, Opo, and Seala). Each has a distinct personality and background that defines the way they talk and interact with other genies. When users interact with the system, they captures the genies at a particular moment in time, during which they talk about their state of being in bottles, about their pasts, and about their expectations or desires for the future. Depending on which genie they listen to most, users will get a slightly different story tailored to that genie's particular history, desires, and beliefs.

The genieBottles use a simple state transition model for interactive storytelling, in which the system plays back the appropriate segment of audio depending on the state it is in, as well as the appropriate segment(s) of audio to transition from one state to another. State changes are caused by user interactions. For instance, if a user opens a bottle, a new genie is brought into the conversation, while if a user closes a bottle, that genie leaves the conversation. The story is organized into many short segments of text ordered according to a narrative progression. Transitioning into a new system state causes the first unused story segment for that state to be played back. This ensures that a new portion of the story will be played back even if the same sequence of interactions is repeated multiple times, allowing the story to maintain a continuous narrative progression.

Future Extensions

The genieBottles system gives a concrete example of how the use of glass bottles as an interface for digital information can be applied to interactive storytelling. In the future, we plan to explore alternative narrative models for the bottle interface. We would also like to extend the current narrative model to support different types of story content that could be used for educational purposes. For instance, a set of bottles containing important historical or political figures might be used to teach children about how peace treaties are made. Or perhaps children could fill the bottles with their own stories in order to help them learn different ways of structuring conversation-based narratives.

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Reference

1. Ishii, H., Mazalek, A., Lee, J. (2001). Bottles as a minimal interface to access digital information. In *CHI 2001 Extended Abstracts*, ACM Press.

Figure 1. The three genie bottles (Junar on the left, Seala in the center, and Opo on the right).

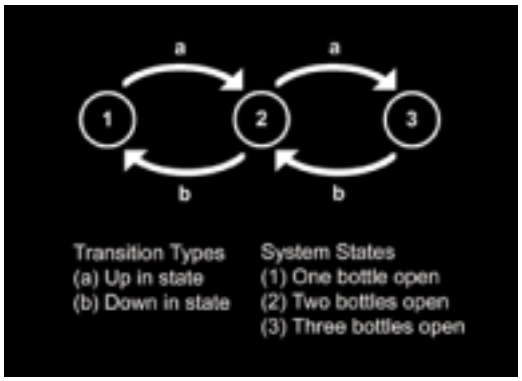

Figure 2. The two types of state transition in the genieBottles system.