

Ice-bound: A Novel of Reconfiguration

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ABSTRACT

Ice-bound is a new story game combining an iPad and a printed book, using procedural story techniques and augmented reality to create a multilayered, professional-quality interactive narrative.

Categories and Subject Descriptors

K.8.0 [Personal Computing]: Games

Keywords

interactive narrative, augmented reality

1. DESCRIPTION

Ice-bound is a professional-quality indie game that combines a printed art book with an interactive narrative app to create an experience with both high-quality surface text and significant player agency. The story concerns an encounter with a fictional artificial intelligence, a simulation of a long-dead author who enlists the player's help to finish his original's final novel. The AI takes the player through a series of stories which must each be resolved. The player's resolution of each story affects the generation of subsequent stories, and the eventual fate of the virtual author.

Each story is built around a dynamically chosen set of symbols representing possible elements of the story. These might be traits a character could have, or plots that could be included in the story. When a story is first visited, the symbols are assigned to an author-defined group of sockets which can be turned on or off by the player. However, the player can only turn a limited number of sockets on at one time. As different combinations of sockets are activated, a version of the story is displayed, projecting what might happen if the symbols associated with those sockets were part of the story.

This is accomplished by authoring a set of events and endings with preconditions based on the set of currently active symbols, conceptually similar to the theoretical Card Shark

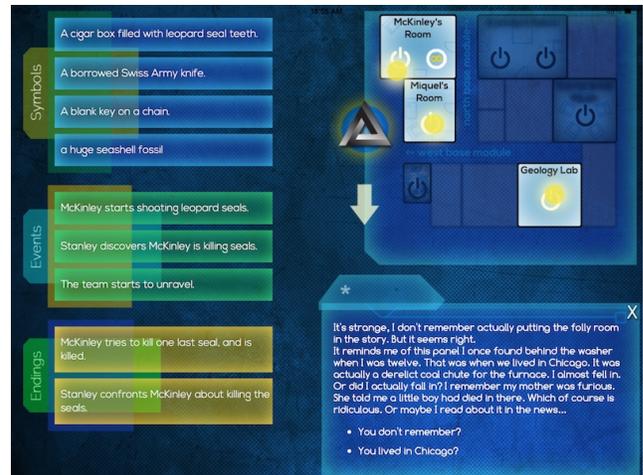


Figure 1: A screenshot of *Ice-bound*.

and Thespis models for hypertext [2]. Symbols can be given arbitrary tags which can also be factored into preconditions, allowing for any member of a group of symbols to trigger a subsequent event. Text is heavily templated to customize it to the current context. A mix of story-specific and global content is created, with each story specifying where global material can be inserted: certain character traits, for instance, might be applied to any character in any story, while others might be authored with a specific character in mind. This mixing of content with different degrees of specificity is similar to authorial approaches taken on some of our previous work, including Prom Week [6].

While players explore possible stories, they also carry on an ongoing conversation with the AI character, who comments on the player's activity based on a set of trigger rules for possible actions or story states. When players find a satisfactory configuration of a given story, they must convince the AI character that their version is correct. They do so by finding a page from the companion printed book that contains an overlapping theme with the selected ending. Using markerless tracking augmented reality (AR), we can identify which page of the print book the player is pointing the iPad's camera at, and display additional layers of story content overlaid on the physical book. Each page and each possible ending are tagged with thematic labels; any overlap between a selected ending and a scanned book page signi-



Figure 2: A photo showing *Ice-bound* recognizing a page from its companion printed book and overlaying imagery on it. Showing the app this page will affect the construction of future stories.

fies a successful resolution. Once a story is resolved, the themes associated with it are strengthened, and as the next story is loaded, the system will attempt to assign sockets with symbols tagged with strengthened themes. In this way the next story has thematic connections with the way the player resolved prior stories, and as play progresses subsequent stories become more and more similar to the player's own aesthetic.

Our design for *Ice-bound* was driven by an attempt to give players agency within an interactive narrative while neither relying on a branching structure nor compromising the quality level of surface text. Many existing designs in this space force the player to make non-reversible decisions at key points, which can create a sense of unease as players wonder what content they're missing, or frustration if they realize that their choices have little narrative consequence. Conversely, many more experimental, simulationist approaches to interactive narrative produce output that is not up to the level of quality expected by readers seeking a compelling story. *Ice-bound* explores a design space that allows for more narrative complexity and emergence than existing frameworks such as Twine [4] or StoryNexus [1], without becoming bogged down in the technical or authorial difficulties of systems such as CiF [6] or Versu [5].

2. TECHNICAL REQUIREMENTS

Exhibition of *Ice-bound* requires one copy of the physical companion volume and an iPad that has been provisioned to run the beta version of the app. Both of these items can be provided by the authors if accepted.

3. FURTHER DETAILS

More details on the specifics of *Ice-Bound*, including the details of our aesthetic and technical goals for the project, can be found in the companion full papers at this conference on the design [7] and interactive story visualization [3]. The project website is <http://ice-bound.com/>.

4. ACKNOWLEDGEMENTS

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