Beyond the Binding: Exploring the Future Book

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ABSTRACT

We have reached a special moment in the story of the book: today's youngest generation will experience literature in a vastly different way than the generation preceding. What we call a book has always morphed over time, but digital capabilities and the ubiquity of mobile electronics are changing the landscape at an unprecedented pace. This workshop will be a forum for creative exploration and discussion of the future of the book, motivated by this particular historical moment and a desire to bring together researchers from diverse backgrounds who are working on book-related technologies. We will share and document visions, approaches, and techniques.

Author Keywords

Interactive Books, Augmented Reality, Augmented Books, Digital Manipulatives, Tangible Interfaces.

ACM Classification Keywords

H.5.m. Miscellaneous.

General Terms

Design, Human Factors.

INTRODUCTION

While the move to electronic book readers has been predicted for a long time, the past few years have truly demonstrated widespread adoption. These readers preserve the portable form factor and readability of bound printed pages while adding the ability to access any book at any time and features such as sharing and linking. The Internet now makes it possible to instantly obtain reference information that used to be accessible only through a collection of encyclopedia volumes and reference books. Much of children's fiction experience has moved online to interactive story-worlds and e-books. Finally, many people are reading stories and referencing information on general- purpose mobile devices such as phones and tablets.

Given this move to digital, interactive and interconnected media, we seek to examine how the traditional paper and

page based book has evolved in the hands of designers and creators, and delve more deeply into where it could be taken in the future.

BACKGROUND

This workshop seeks to examine not only the book artifacts themselves, but also approaches, techniques, and the creative process around developing new book technologies. Designers and technologists have explored books from many angles and with a variety of purposes, only a small fraction of which can be touched on here.

One approach has been to preserve the aesthetic and emotional experience of reading a book while augmenting it with new technological capabilities. For example, the Listen Reader books take the physical form of traditional books, but allow readers to play narrative-related music and sounds by turning pages and tapping on printed pictures [1]. Here, actions normally done in the process of reading a traditional picture book are also read as electronic inputs for interactivity.

Researchers are also developing specific techniques for using traditional book form factors and materials in the context of modern technology; for instance, through embedding soft sensors and electronics on paper [3,5]. An example is Electronic Popables, a paper book that integrates traditional pop-up mechanisms with thin, flexible, paper-based electronics [7].

Some have taken a hybrid approach to blending dynamic digital information with physical books: the PhoneBook is an interface that integrates a phone screen into a traditional paper book, allowing users to interact with the story by tapping and swiping the display [6]. The MagicBook uses printed fiducials to incorporate augmented reality and virtual reality elements [2]. Finally, D-TOK is a storytelling book that reads physical cards at tokens for characters and actions which sent to a screen, so that a story unfolds as the cards are placed into the book [9]. In these, though the physical book form is present, actions associated with digital devices are introduced, thus transforming the experience of the book.

Many others shift away from the book form factor altogether but maintain the essence of page-based storytelling. These reading experiences are augmented with new ways to manipulate narratives, especially in ways

that allow readers to create the story as it is read. For example Tink-R-Book is a touchscreen-based program that allows users to proceed in the narrative page by page while manipulating pieces of the story itself [4].

Finally, some designers take the reverse approach by analyzing the affordances of paper and books to leverage them in completely different contexts. For example, Rosner et al examine normal interactions with books to distill principles for designing technology [8].

CALLS FOR SUBMISSION
We are looking for creative explorations that preserve, reinvent, or repurpose the functions and affordances of the book. What forms will the spirit of "book" take many years from now? We encourage participants to think broadly about the question. A submission could serve a function that books have historically served but does not necessarily look like a book. It could look, feel, and function like a book but serve an entirely different purpose. It could explore creative approaches to expanding the definition of what a book could be. We encourage the submission of materials showcasing prototyped concepts and works-in-progress.

OBJECTIVES
The objectives of the workshop are as follows:

Bring together researchers from diverse disciplines to share ideas, techniques, and approaches.

Suggest directions for the research on book technology.

Produce a collection of book idea exemplars.

WORKSHOP STRUCTURE
The workshop will be divided into three sessions. First participants will present their book projects in a show-and-tell fashion. Next, to set a context for discussion, organizers will show a historical overview of the book and the more recent timeline of interactive books. Finally, participants will break into groups around proposed topics, which include hands-on technique learning, discussion groups for deeper exploration, or paper prototyping around specific areas of interest.

ABOUT THE ORGANIZERS
Natalie Freed is currently a researcher in the Personal Robots group at the MIT Media Lab. Her work centers on creating technology for children that leaves room for redefinition and user participation in the design process. Jie Qi is currently researching in the High-Low Tech group at the MIT Media Lab, where she blends electronics with traditional crafts with the goal of empowering traditional users of technology to become its creators. Cristina Sylla is currently a researcher at engageLab/ University of Minho where she works on the design of new learning materials

that combine traditional pedagogical materials with embedded digital technology. Pedro Branco is Assistant Professor in the Department of Information Systems at the University of Minho, where he is currently director of the Masters Course in Technology and Digital Art.

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