Between play and storytelling, an augmented reading experience

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ABSTRACT

This paper presents an attempt to combine gaming and reading. We want to achieve an expansion of a story-world by transmitting the sensual, emotional and cognitive expression of the book into a tablet game.

The paper presents a prototype implementation of an augmented reading experience for children in which a physical copy of the book "The Little Prince" is tagged with QR codes. When scanning these codes using an iPad 2, a series of mini-games, that relate to the corresponding narrative in the book, can be played

The main focus of the paper is to reflect upon our transmission of the story-world of the book into a series of tablet mini-games, and how the game interactions reflect back on the users perception of the story.

Keywords
Transmedial worlds, tablet, game, interaction design.

1. INTRODUCTION

With this paper, based on our previous specialization project in the course Digital aesthetics, we want to create a coherent and believable concept for a story-world between the book "The Little Prince" and a series of mini-games on iPad 2, in order to make a new and different experience of the "The Little Prince".

Our definition of a story-world takes its starting point in the thoughts of Susana Tosca and Lisbeth Klastrup on transmedial worlds (TMW): *"A transmedial world is an abstract idea of a world generated on the grounds of the first actualization of the world and the core elements this world contained, but not in anyway restricted by this."* (p. 4)

The first actualization here is the book "The Little Prince".

The point in using TMW is that *"The imaginary construct of the world* [in question] *is evoked in the participant's imagination, and each simple act gains much wider meaning"*. (p.1.) By making mini-games that relate directly to the book, the actions in the games gets a wider meaning, as it is set in the wider context of the book.

This widening of meaning, along with Tosca and Klastrup's core elements for making a believable transfer of the world across two media (mythos, topos and ethos), is incorporated in our story-world notion.

Tosca and Klastrup propose a frame for transferring worlds that originates from the ur-actualization of the story, but does not retell the ur-story.

With our story-world concept the ur-story has a much closer relationship with the TMW, as we want to extend the experience of the ur-story. We do not retell the ur-story, but our mini-game extension builds directly on it, using the specific interaction potential of the tablet medium. By doing this we create a new interplay between the book and the tablet, which is based on the story-world. Without the story-world, the link between book and tablet mini-game would not be meaningful.

"The Little Prince For iPad" consists of a physical book, tagged with QR codes that links to a series of mini-games for iPad. We've constructed a prototype, in which you scan a QR code and access a sketch of a game by which you can manipulate an object via the gyroscope of the iPad. Furthermore we've made rules and concepts to four other mini-games, and drawn mock-ups.

1.1 Why the tablet

We choose the tablet medium to expand the story-world of "The Little Prince" onto, because of the relatively new interaction possibilities of the iPad 2, compared to a computer. The computer primarily offers interaction by keyboard or mouse, whereas the tablet features various kind of interaction such as touch -point and -swipe, sensory of balance and tilt (accelerometer, gyroscope) and augmented reality by picture recognition (camera).

Furthermore our concept invites child and parent to sit together, in the sofa for instance, interacting together with the book and the mini-games. The tablet medium is of proper size and weight for this purpose.

The bigger screen of a television or stationary computer might also steal too much of the attention from the family being together and the reading of the book.

2. RESEARCH FIELD

In the field of interaction design, several projects have attempted to create interplay between book and tablet or to augment the reader's experience. An example is a book attached with RFID tags that activates a virtual document on a tablet, created by scientists from Xerox PARC (Want, et al. 1999). Even though the augmented book created at Xerox PARC, can be considered

transmedial, the research aim was technological - to bridge the physical and virtual worlds.(Want et al. 1999)

Gradually focus has turned towards applications of the technology, and user experience. More closely related to our experience-oriented focus, Rocchesso and de Götzen, have created an augmented sound-book, seeking to boost the user engagement. By implementing sensors in a children's book, it enables the child to manipulate sounds by interacting with the book. (Rochesso and Götzen, 2005)

In recent years, especially film and broadcasting industries have unfolded stories across media, as a way to entertain and involve their audience. In Denmark, we see examples of transmedial storytelling such as the children's channel Ramasjang, which revolves around a universe with a set of consistent characters, while Danish series as "Livvagterne" have augmented their universe by an online game experience. We have not been able to find examples of academic work in the transmedial field that examine the book publishing industry, as fewer book publications are augmented with content across media.

The success of transmedial storytelling in film and broadcasting has reflected on the academic field, where media scholar, Henry Jenkins is concerned with how films and TV series can create a unified and coordinated user experience. Likewise are Danish games and media scholars Tosca and Klastrup, who provide a framework to identify transmedial traits in a world, partly by drawing on Star Wars as an example.

We consider "The Little Prince for iPad" as a transmedial concept, that can be classified as neither literature nor gaming. As a consequence, we focus on transmedial storytelling, but the discussion will draw on research from game design, because it can supplement with rewarding views on how games and stories interrelate.

3. THE CONCEPT

"The Little Prince" tells the story of a little boy who journeys out in the world to find a friend. On his trip he visits a series of asteroids, inhabited by disillusioned or otherwise misguided adults, and he questions the conduct of the adults.

We were inspired by the prince's wonder to design video games where children could not only ask questions, but also interact.

Our overall idea was to transform the conflict of each book chapter, if possible, into a mini tablet game, by transferring the story-world and creating a game interaction where the conflicts could be addressed (this would of course be affected by our interpretation of the chapter in question).

The outcome of our idea was a concept called "The Little Prince for iPad", which combines reading and gaming elements into an augmented experience for young children and their parents. By conveying the conflicts of the book, into a series of games, it extends and augments the experience of the book.

"The Little Prince for iPad" offers a close relationship between the book and the iPad 2, as the child scans a QR code at the end of a book chapter in order to activate a mini-game. The subject matter of the game is then the same as in the appertaining chapter, transforming the conflict of the book into a hopefully relevant and meaningful gaming sequence on the tablet.

We sketched five mini-games in our development of the concept (see figure 1 and table 1) identifying interesting issues and conflicts, with a potential for game interaction. Furthermore the mini-games have to be suitable for transmitting the sensual, emotional and cognitive expression of the book.

Figure 1 Sketching mini-games for chapter 9: *Fight the baobabs* and *Sweep the volcanoes*
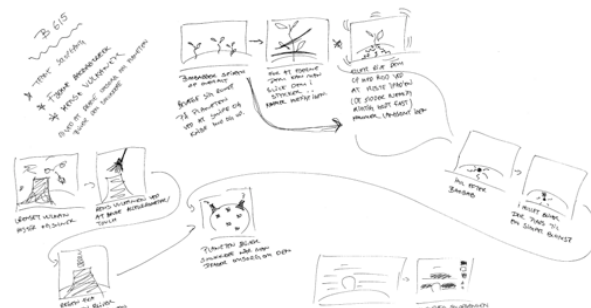
Table 1. Five mini-game conflicts and interaction

Game	Issue/conflict	Interaction
Chapter 9: Asteroid of the prince *Fight the baobabs*	The roots of the growing baobab trees can crush the asteroid and destroy the prince's home.	Swipe with fingers to cut down trees, or shake the tablet to activate accelerometer, and tear the trees up by the roots
Chapter 9: Asteroid of the prince *Sweep the volcanoes*	One never knows when a volcano might erupt (due to clogging of dirt) and damage the asteroid	Swipe with fingers to clean the volcano or use entire hand to remove dirt more effectively
Chapter 14: The Lamplighter *Slow down time*	The asteroid is rotating very fast, making the work of the lamplighter stressful	Slow rotation of the asteroid by simply turning the tablet as a steering wheel
Chapter 14: The Lamplighter *Light a lamp*	Same conflict – instead of slowing the rotation, the user undertakes the lamplighters labour	Touch, swipe and paint by hand, to create your own version of the lamplight
Chapter 15: The geographer *Asteroid of the geographer*	The man at this asteroid is a geographer, but has never seen the world	Point and drag the planet, to search for explorer gadgets for the geographer's journey

4. PROTOTYPE

Alongside the development of "The Little Prince for iPad" concept, we created a prototype of one of the mini-games, called "Slow down time" based on chapter 14 in the book. The prototype is an html- and Java- script designed to try out the main interaction of the mini-game.

Chapter 14 in the book introduces a lamplighter whose asteroid is described as so small, that three strides will take you all the way around it. The faithful lamplighter follows "the instructions" to turn on and off his lamplight, every morning and evening. But since the rotation of his asteroid has increased over time, a day now only lasts a minute and the lamplighter has lost the passion for the job, and is forced to neglect what he loves most: sleeping.

The game revolves around the lamplighters lost passion and his desire to get a nap. The user can tilt the iPad as if it was a steering wheel and the asteroid on the screen tilts alongside with it. By doing this the user can keep the lamplighter and his lamp away from the sunlight, and make it possible for him to sleep. This task is made difficult by the rotating background shifting from night to day. In order to get a better understanding of the prototype "Slow down time" please view the storyboard on http://www.itu.dk/people/lisb/storyboard.pdf.[1]

As the prototype only enables the user to try the interaction, and not view the intended feedback of the mini-game, a small animation video was made alongside it; http://www.itu.dk/people/lisb/slow_down_time.html.

We tried the prototype with two boys the age of seven and ten. We read chapter 14 aloud to them, explained how to scan the QR code and then allowed them to explore the game in turn. After a little while we showed the animation video to them.

Methodically, it was not a scientific user-test, but merely a positive indication of the transparency of the concept. The boys were excited about the game-starting QR codes and the interaction, so different from their usual computer games. They furthermore recognized why the lamplighter fell asleep and were excited about it, as the oldest boy remembered that the book said that the lamplighter loved to sleep.

Figure 2 Seven-year-old boy testing the prototype

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[1] Unfortunately we cannot offer the reader of this paper a demonstration video of the prototype, but we will bring the prototype to the SIDeR conference an encourage everyone interested to come and try it.

5. THEORETICAL DISCUSSION

This section discusses how the design choices based on our theoretical framework inform the concept "The Little Prince for iPad" and how this relates to our intention of making a new and different experience using a story-world across media.

5.1 The believable extension – transfer of story-world

In "The Little Prince on iPad", the transmission of the mythos and ethos is not as literal as suggested by Tosca and Klastrup. As mentioned in the introduction, Tosca and Klastrup define a transmedial world as an abstract idea of a world, where the first actualization of the world creates the frame for future versions. Their main criteria for a successful transmedial world, is a precise identification and transmission of the core elements of the ur-actualization: topos, mythos and ethos. (Tosca and Klastrup, 2004: 412)

The mythos comprises the original conflicts, objects, and characters of the ur-actualization. The topos defines the environment and time of the present course of events, while the ethos defines the ethics of the world, and which actions are acceptable in the context of the ur-actualization. (ibid.)

Their work on TMW is centred around large and complex worlds, such as *Star Wars*, rich on details and environmental descriptions, while "The Little Prince" is a quite short story with limited descriptive details on environment and characters.

Where it is possible, we have transferred objects and characters (mythos) and surroundings and time (topos), meaning that the mythos and topos directly described in the book were identified and actualized in the mini-games.

However a large part of the reading-experience could be described as a lyrical immersion, and even though the story is in the genre of fairy tales, we find a rich depiction of senses, thoughts and emotions.

Therefore we put the notion of core elements to use in a less literal way than suggested by Tosca and Klastrup, by transferring the lyrical aspect of the book, and converting it to actions. We put the mythological conflicts to use as basis for each mini-game. As a consequence, the gameplay solutions to these conflicts are reflected in the ethos of the ur-story.

Besides transferring central characters, norms and locations, the universe in our concept is based upon the lyrical aspect, which is an essential part of the story-world of The Little Prince.

An example of the lyrical transfer could be the game "Fight the baobabs" on the asteroid of The Little Prince. The prince stresses the importance of cleaning the planet every morning. The lyrical aspect in this context consists of the strong emotions the prince has for the state of his asteroid. Thus the underlying logic of the sensual, emotional and cognitive expression of the book is transmitted to the tablet game.

5.2 Procedural rhetoric leads the user's interpretation

Some of our very first thoughts on this project originated from an excitement with the story of "The Little Prince" and we had a wish to make children reflect upon the conflicts of the story. One might question whether we succeeded, since our own reflections and interpretations of the story conflict (during the design of the concept) can possibly lock down the interpretation of the story-world's conflicts, into one way, namely our way, of seeing things.

We can use procedural rhetoric to explain how game interaction can both limit and lead the player's experience. Game scholar Ian Bogost explains procedural systems, in relation to the computer, as generators of behaviour on the basis of a rule based model. Ones behaviour inside the model will be catalyzed by the rules.

Bogost speaks of the enthymeme in relation to interactivity *"The enthymeme [...]is the technique which a proposition in a syllogism is omitted: the listener [...]is expected to fill in the missing proposition and complete the claim."* (Bogost, 2007: 43)

As an example, the enthymeme used in the prototype of "Slow down time" is as follows: The lamplighter feels pressured as a consequence of the increased rotation of his asteroid. > The lamplighter is stressed out, pressure releases (the users interaction) > the lamplighter experiences relief.

By producing an efficient procedural enthymeme, in our interpretation of Bogost, one can create a flow of interaction, where the users own interaction is filling the missing proposition, and thereby creating and argument.

This can be used to make persuasive procedures in for instance game design, giving the user the possibility of learning through interaction instead of giving him a lecture.

The quests in the tablet mini-games were designed to transmit the message of the book through the player's actions. By using procedural rhetoric we reconstructed the conflicts and questions posed in the book, and assigned the player the task of settling them. As a consequence, the user experiences the conflicts first hand, and gets time to dwell into individual issues, in a way that they would not if they had only listened to the story.

By making gameplay inspired by Bogost's procedural rhetoric, we tend to lead the interpretation in the direction of our own understanding of the mythological conflicts of the story.

Bogost argues, that gameplay designed with procedural rhetoric will produce an argument, through the interactions of the user. This argument has to be clear and articulated, in order to design the gameplay leading to it. This means that we, as producers, interpreted and articulated these arguments, while designing the gameplay.

Because of this the user might be affected by our interpretation of the book, as he or she interacts with the conflicts of the game, fulfilling the enthymeme with his/her actions and thereby making the argument.

The mini-games offer the user a possibility to solve the conflicts of the book, and the solution to the conflicts, designed by us, might influence the overall experience of the story-world. In other words: the conflicts presented in the book will not be an open question anymore. In consequence the user experience of our concept can be a more controlled interpretation of the story, compared to the experience of only reading the book.

On the other hand, Miguel Sicart states in his paper "Against Procedurality" (Sicart, 2012), that the intentions of the designer cannot be transferred directly to the user by means of procedural rhetoric. The user experience is situated, and influenced by each individual's realm of understanding and knowledge. When considering the experience as situated, the procedural enthymeme can be a way of leading the user to grasp the conflicts of the ur-actualization, in cases where their knowledge of realm and understanding is limited., it is not given that users will agree with the proposed procedural enthymeme, which in the case of "*The Little Prince for iPad"* is acceptable, since the purpose of the concept is not persuasive.

As the enthymeme of the tablet mini-games is based on the conflicts of the book and the solutions to these conflicts are designed in accordance with the ethos of the book, the procedural rhetoric creates a coherent story-world across media.

5.3 Establishing connection with processes

Even though our concept cannot be considered an absolute aesthetic experience, we can apply John McCarty and Peter Wrights theory of the aesthetic experience to understand how an interactor relates to our game. The processes of "cumulation", "conservation", "tension" and "anticipation" might help creating a coherent story-world across media.

McCarthy and Wright explain the processes as follows: Cumulation encompasses the temporal construction of an experience. Without cumulation, which can be experienced as increase of tension or meaning, there can be no feeling of satisfaction or fulfilment.

Conservation of the past is embedded in the present and ones next experience will therefore be perceived on the basis of the past.

To create tension in an experience, resistance is built up. Without resistance the energy of the experience will be flat, as the tension would be released immediately. Tension is therefore highly related to cumulation.

Anticipation happens both before the actual experience has begun, as the expectation for the experience to come, and during the experience. Does the experience live up to the expectations of the user or do they fall through? It is relevant to consider the concordance between the anticipation build up and what can actually be fulfilled in a given experience. (McCarthy and Wright, 2004: 62-64)

The mini-games of our concept are designed in order for the user to explore and figure out the game rules of each game by her- or himself. In order for the user to do this and have just a fragment of an idea of what to do in a given mini-game, the relation between the story in the book chapter and the mini-game must correlate. This explorative way is necessary to the concept, as the user in this way contributes to the procedural rhetorical enthymeme on his own, passing on the message of the story. (Bogost, 2007)

The process of conservation is therefore highly applicable, as the mini-games in our concept rely on the users conservation of the book chapter in order to experience a broadening of meaning, e.g. the logic of why the game is responding in a certain way to the user interaction. It is not impossible to play a mini-game without

reading the chapter to match, but it doesn't offer a high level of meaning either.

Tension builds up cumulation, as resistance is used to block release and therefore the tension increases. Without resistance the tension would immediately be released, and the experience of the mini-games would be dull. Our game's explorative approach to game rules and the transfer of the conflict from the book creates tension in the mini-games.

The anticipation of which mini-game comes up next in the following chapter also contributes to the overall cumulation, which is based on the conservation of previous experience with the relation between book and mini-game.

6. CONCLUSION AND FURTHER WORK

With our concept we have sketched a frame in which a story-world between the book "The Little Prince" and a series of mini-games on the tablet medium can be created. This is not exclusively a reading-, nor a game-experience, but an experience combining the two in order to experience an enlargement of the story-world and the possibility to interact with it. If the tension of the mini-game is experienced as suitable for the user in question, if the rules of the mini-game are identified, if the story-world is believable and if the lyric aspect of the book is recognized in the actions of the game, the user might experience the story-world as a whole, transcending media.

Future work on this project would be to investigate the interplay between user, book and tablet. We propose the construction of more complex prototypes with more developed game mechanics and responses, of several of the hand-drawn mini-games of our concept, in order to conduct a series of empirical user studies of the reading and gaming experience as a whole.

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