

Augmenting Yu-Gi-Oh! Trading Card Game as Persuasive Transmedia Storytelling

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Abstract. In this paper, we present *Augmented Trading Card Game* that enhances remote trading card game play with virtual characters used in the fictional stories of popular animations and games. We show our observations about the way players use the system, realizing the game, and what their feelings and impressions about the game are. We believe the obtained results would be useful to consider how to use empathetic virtual characters and the fictional story that the characters are used in, in the real world activities for future information services. We also discuss how our approach can be extended to design a new type of transmedia storytelling by considering *Augmented Trading Card Game* as one form of transmedia storytelling. From the experiences we propose a framework for designing transmedia story telling aiming to change people's attitude and behavior named persuasive transmedia storytelling. The framework called value-based design framework is a first step to design persuasive transmedia storytelling.

Keywords: Storytelling, Augmented Reality, Trading Card Game, Virtual Character.

1 Introduction

Virtual characters are widely used in our daily life, recently. For example, famous Disney characters like *Mickey Mouse* and *Donald Duck* provoke our empathetic feelings easily anytime and anywhere, and *Kitty* and *Pokémon* are now found all over the world. In animations and games, each virtual character has its own personality and story, which can be used as a medium to convey special information and messages to people. If people are familiar with the fictional story of an animation or a game, then the story's characters are able to recall the leitmotif of the story easily without much additional information but by just performing some action/interaction with the story's character. Especially, many Japanese animation and game stories contain serious ideological messages that are important to make our daily life more desirable. We believe that this observation is very important when considering how to use virtual characters in various future information services in the real world.

In the contemporary Japanese society, several posters for public service announcements have adopted the idea to use virtual characters from recent popular

animation stories. For example, Japanese popular animation K-ON! has been used for promoting a national survey in Japan¹. Also, NFGD that promotes guide dogs' training has created two posters using popular characters from Puella Magi Madoka Magica, which is recently very popular in Japan². These examples show the effectiveness of using virtual characters that have their background stories to attract people. Moreover, they are good evidences that virtual characters could be used to convey ideological messages that might play significant role in changing people's current attitude. In Japan, the majority of young people have been enjoying animation and game stories for a long time and they know the popular animation and game characters and their stories very well. This we believe is a good prerequisite for using virtual characters to enhance emotional feelings and successfully convey ideological messages through the characters' stories.

This paper presents Augmented Trading Card Game (Augmented TCG) for playing the Yu-Gi-Oh! Trading Card Game³ (Yu-Gi-Oh! TCG) between two players who are located in different places. The system, realizing the game, supports the remote trading card game play with virtual characters. In Augmented TCG, we use virtual characters used in Yu-Gi-Oh! comic and animation. Yu-Gi-Oh! TCG has been originally introduced in the Yu-Gi-Oh! comic and animation. One of the reasons why Yu-Gi-Oh! TCG is popular in Japan is the fact that almost all young people have first enjoyed the comic and the animation story and then learnt how to play the game from that story. The story also teaches some important ideological concepts such as the importance of justice, friendship, bravery, positivity, and thoughtfulness. That is why we believe that the characters of the Yu-Gi-Oh! animation story can be used to enhance the playing style of the game through the stories they carry and recall. In this research we are interested in investigating the impact of the presence and behavior of the 3D virtual characters on the players' emotions and feelings, and the play style of the game. We discuss that Augmented TCG is considered as one form of transmedia storytelling. Transmedia storytelling is the technique of telling a single story or story experience across multiple platforms and formats using current digital technologies [2]. Our approach enhances an original fictional story in corporation with a real world game to create a new story that a player of the game participants.

From the experiences with *Augmented TCG* as transmedia storytelling, we also propose a value-based design framework for designing persuasive transmedia storytelling aiming to change people's attitude and behavior. Persuasive transmedia storytelling consists of *Augmented TCG* as a real world game and a fictional story, where the fictional story enhances the game play by reminding ideological messages in the story while playing the game, and this encourages a player to change his/her attitude and behavior. The framework uses six values, *informative value*, *economic value*, *empathetic value*, *aesthetic value*, *persuasive value*, and *ideological value* that are extracted from our experiences with designing *Augmented TCG*. The proposed framework shows how the four (*informative*, *economic*, *empathetic*, *aesthetic*) values

¹ <http://www.youtube.com/watch?v=IdAkKZKEfGU>

² <http://www.nkoku.jp/pos>

³ <http://www.yugioh-card.com/en/>

are used in a real world game to increase people's extrinsic motivation by offering adequate feedback to them. On the other hand, the *ideological value* offered in a fictional story makes people's dream and expectation explicit to teach how changing a player's attitude realizes his/her dream. Also, the *persuasive value* in the story increases human self-efficacy. The values enhance their intrinsic motivation and makes people think more positively. Therefore, the hurdles for people to solve hard problems become lower, and they become more confident and enthusiastic in taking an action to solve the problem through their increased self-efficacy and positive thinking.

2 An Overview of Augmented Trading Card Game

Augmented TCG enhances the remote trading card play performed by two persons. The basic design approach is similar to the one of the augmented reality games introduced in [9], which integrates physical items and virtual items. As shown in Fig. 1, the two players are located in different places. Each player's cards, in his/her duel field on the table in front of him/her, are captured by a camera and projected on the opponent player's table.

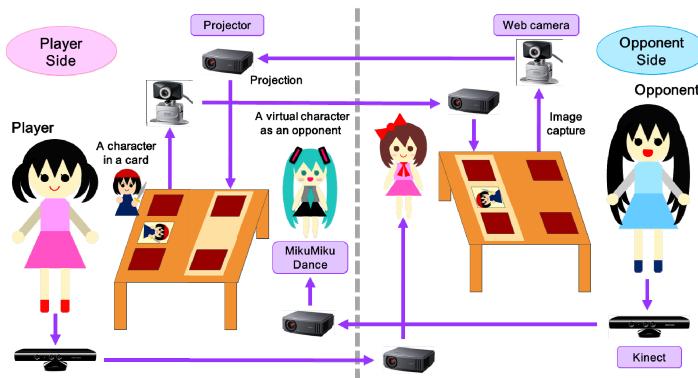


Fig. 1. Augmented Trading Card Game System

Also, each player is represented by the 3D model of a virtual character used in popular animations and games, and this character is shown to the opponent player. In the current implementation, *MikuMikuDance*⁴ is used to show the 3D models of the virtual characters. *MikuMikuDance* is free software for creating 3D movies by using virtual characters. The virtual character is controlled using *MS Kinect* and its movement is synchronized with the movement of the opponent player. In the current *Augmented TCG*, a player can choose one of three virtual characters that are *Yugi* and

⁴ <http://www.geocities.jp/higuchuu4>

Kaiba from the *Yu-Gi-Oh!* animation story, and *Link* from The *Legend of Zelda*⁵. *Yugi* is always surrounded by many friends and his winning success is a result of his strong bonds with his friends who love the trading card game. *Kaiba* is a lonely hero and he always seeks the strength in the game, but he does not accept other people's help even if he is in a critical situation. However, in the story he also finally understands the importance of friendship. Most young boys want to follow either of these two characters because of their typical, very attractive and ideal personalities. The reason to choose *Link* as the third character in our experiment is that we would like to investigate how a popular character from another unrelated to TCG story affects the attitude of a player.

Furthermore, while playing the game, another virtual character, which has been depicted on one of the player's cards in advance, appears on a small display near the player once that card is drawn out of the deck, and supports and encourages him/her to win the game until the end of the game. In the current prototype system, we cannot show characters depicted in any cards of players. In our experiments, we have chosen one special card, and show the character in the card on a small display for evaluating our approach.

We have selected *Dead Master* from *Black★Rock Shooter*⁶ as a character to be depicted on the card because we feel that the character does not contradict with or violate the atmosphere of *Yu-Gi-Oh!*. *Black★Rock Shooter* has two worlds. *Dead Master* is an enemy of *Black★Rock Shooter* in another dimension world, but in the daily world, they are very close friends. This becomes a persuasive message conveying the meaning that players need to keep and develop their friendship even if they fight seriously in a game.

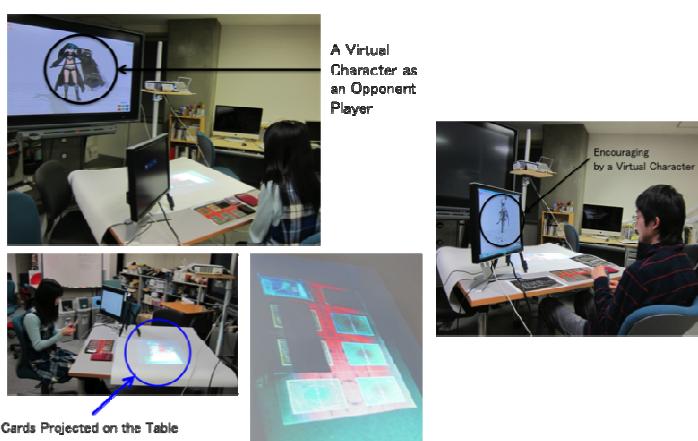


Fig. 2. Current Prototype Configuration

⁵ <http://zelda.com/>

⁶ <http://blackrockshooter.wikia.com/>

Fig. 2 shows the current prototype configuration for a participant. On a large display, a virtual character, which movement is synchronized with the movement of the person who imitates the opponent player, is shown. A camera is setup behind the small display near the participant, and captures the image of the cards. The opponent player's cards are projected on the table by a projector.

3 Augmented TCG as Transmedia Storytelling

Enhancing games played in the real world like TCG with fictional stories is a promising direction to design a new form of transmedia. In this section, we discuss some design implications of *Augmented TCG* that will be considered as one form of future transmedia storytelling from our experiences with designing and experimenting *Augmented TCG*.

In the current *Augmented TCG*, its animation and game story is explicitly not shown during the play. A player needs to recall the story during his/her play. More tight integration of the game play, and the animation and game story offers a new possibility to design transmedia. The movement of a virtual character from the virtual world to the real world offers a tight integration between the fictional story and the TCG game play. Transversal interfaces [1] offer a way to move between the worlds seamlessly. The approach offers a stronger association between a fictional story in the virtual world and the real world through a virtual character than the current approaches, and the boundary between the two worlds becomes more blurred.

We believe that a participant would be more excited to play the game if a character drawn on a card from his/her favorite deck is shown to encourage him/her. Cards are considered as one piece of transmedia to construct a fictional story. However, the preferences for that character are different according to the player's gender. A female player usually likes a card depicting a pretty girl. In this case, encouraging cheerfully the player with gestures by that character would be natural and meaningful. On the other hand, a male player usually likes a powerful card that may depict a strong monster. In such a case, the encouragement by the character should be more powerful and adding special effects to show the superior ability of the character would be more suitable and more effective to motivate the player. Thus, if the character is one of the player's favorite characters, then the encouragement would be a powerful tool to increase the player's motivation and excitement of the game.

When playing with a virtual character from animation and game story, the player also tries to mimic the character's behavior in the animation story. This can be a useful and successful approach to teach players how to improve their gaming skills. If players follow the skillful character's way of playing in the story, then they can learn new skills and techniques from that character's experience in the animation. Of course, a skillful friend is a good coach for improving players' skills, but if there is no good coach available around the player, then they need to learn by themselves and doing it following the experience of the character would be a promising and exciting approach to exploit future transmedia storytelling.

In our experiments, we could not find the rigorous evidence that the stories of the virtual characters could always strongly affect the attitude of the players. One of the reasons is that in our current research we focus on a game. For most people, the purpose of a game is just for fun. Of course, the duel against *Yugi* and *Kaiba* makes players play the game more seriously, but it is hard to make players braver when *Link* is shown as an opponent player. *Link* is a character in an RPG game, and a male player considers that the character is just like his avatar in the game, so his story does not have strong ideological messages in the game. Also, the presence of *Dead Master* does not have a strong impact on a player, since the character itself is very popular, but its story is not so well known yet. This means that well known stories that contain strong ideological messages and characters that have powerful and distinctive personalities are important to make virtual characters be used as metaphors. We also consider that the music used in the popular stories could also become a metaphor for the stories because in Japanese animations, their music sometimes becomes more popular than their characters. We believe that designing metaphors that use the popular stories in animations and games is a promising future direction to convey complex ideological messages to people without presenting a large amount of information to them.

One of the problems in using virtual characters is their copyright. There are many free 3D models for *MikuMikuDance*, but some of them are deleted on the Web due to the copyright violation. However, freely available models offer new possibilities to enhance games because the models can be easily customized. In Japan, it is a popular culture to create new characters and stories from existing ones. Using a customizable virtual character in *Augmented TCG* may create a new playing style of TCG, and the new stories of the character can be used to enhance its role as a metaphor.

As already described, virtual characters used in animations and game stories are widely used in multiple media channels. In *Pokémon*, a synergy among games, movies, and TV programs is used to make the *Pokémon* story more popular, and make the story pervasive in its fan's daily life. Also, in the *Yu-Gi-Oh!* animation story, the animation story teaches its game players how to play the TCG game and why the game is attractive while they are watching the animation story. Using multiple channels to communicate messages among people is a very effective way to convey the messages among people because each channel can convey the message in a special partial way. This is also a typical approach in the current advertisement because only one medium cannot deliver the advertisement to a large audience of people.

4 Value-Based Design Framework for Designing Persuasive Transmedia Storytelling

The important power of *Augmented TCG* as persuasive transmedia storytelling is to change a user's attitude and behavior. In *Augmented TCG*, we adopted the idea to show virtual characters as opponent players. The virtual characters are used to remind their background fictional story, in which these characters play an important role. The story contains some ideological messages and makes a player to believe that the ideological messages are important in his/her daily life. In the *Yu-Gi-Oh!* animation story,

Yugi and *Kaiba* always think that they can overcome the current problem and all problems will be overcome if they work very hard. Then, a player becomes to think positively that his/her skills in the game will be increased and he/she will play a TCG game much better than before.

In our daily life, there are many social issues that we need to take into account. These issues will be solved if we can work hard in order to overcome them. However, we usually do not feel the self-efficacy to overcome the issues. The results of the positive psychology teach us that the positive thinking plays a very important role to increase our self-efficacy to solve hard problems [4, 5].

In our approach, the fictional story offered with *Augmented TCG* makes it possible to change a user's attitude and behavior. The story first teaches us how playing *Augmented TCG* is effective in our daily life. Then, the ideological message in the story also makes a user believe that changing his/her attitude and behavior is essential to achieve an ideological goal that will lead to overcoming some serious social problems. Finally, the positivity in the story increases the user's self-efficacy to overcome the problems.

Recently, the promotion of a commercial product becomes very complicated because consumers are fragmented to use various social media, and there is not only one medium that is useful to advertise a target commercial product. Persuasive transmedia storytelling will be useful to promote the attractiveness of the products. The story offered as transmedia reminds us the product's attractiveness. Modern advertisement methods use various media, not only traditional television and newspaper commercials, but also *Twitter* and *Facebook*. The advertisement delivers the story about the product or its brand through these various media. The reality of the story increases the empathy on the story. Also, the ideological message contained in the story makes a user believe the effectiveness of the product, where the product helps to overcome some social issues in our daily life by using the product and by changing the user's habit or thinking. Finally, the positivity in the story can increase the self-efficacy to overcome the social issue. Our experiences with *Augmented TCG* show that using fictional stories can be extended to design ordinal consumer products as persuasive transmedia storytelling.

For considering the above issues, we need a design framework to show a guideline to design persuasive transmedia storytelling. Fig. 3 shows our basic approach to use the proposed six values to increase people's intrinsic motivation and to make them think positively when incorporating a fictional story into persuasive transmedia storytelling⁷. The *empathetic*, *economic*, and *aesthetic values* offer people extrinsic incentives, and the *informative value* shows the reason to change human's attitude or tips and tactics for making a better decision. Our framework is based on the *transtheoretical model* that is a psychological model to change human's attitude [10]. The four values are used as tools in the model to change a user's current behavior by reminding the importance of changing his/her behavior and encouraging this change at an early stage. On the other hand, the *ideological value* makes people's dreams and

⁷ The values are originally proposed in [7]. The current definition of the values is enhanced from the experiences with *Augmented TCG*.

expectations explicit and teaches how changing a user's attitude realizes his/her dream. Also, the *persuasive value* delivers the importance of the *ideological value* to a user. The values are used to increase the intrinsic motivation to change his/her attitude in the latter stage of the *transtheoretical model*. In our approach, we assume that a user already knows the story so the persuasion in the latter phase becomes faster than using traditional ways.

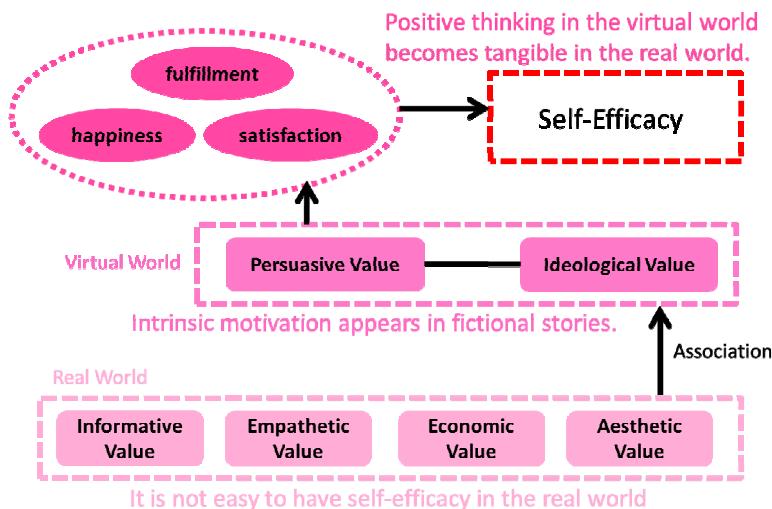


Fig. 3. Value-based Design Framework

The combination of the extrinsic motivation and the *ideological value*, and the *persuasive value* strongly enhances the intrinsic motivation and changes people's way of thinking. At first, the four values are used to increase a user's extrinsic motivation, but after a user understands the ideological messages represented as the ideological value in stories, the persuasive value makes him/her believe that he/she needs to achieve the ideological message in the real world through the association between the real world and the virtual world in the fictional story. In this step, the *persuasive value* changes the extrinsic motivation of the four values to the intrinsic motivation. For example, playing against a favorite virtual character becomes a player's extrinsic motivation. However, during understanding the background story of the character well, the empathy on the character becomes the intrinsic motivation because the user can know how the character tried to realize the ideological message in the fictional story. Also, the tangibility of a trading card as the *economic value* becomes a player's extrinsic motivation. However, while collecting trading cards, a player increases his/her self-esteem by constructing his/her own personalized and unique card deck, and this becomes his/her intrinsic motivation because the process also constructs his/her firm personality.

The story' positivity makes people think more aggressively by increasing their self-efficacy. Thus the hurdles for people to solve some hard social problems become

lower, and they become more confident and enthusiastic in taking an action to solve the problem through their increased self-efficacy and positive thinking.

5 Related Work

The Alternative Reality Game (ARG) is a promising approach to convey messages to people using multiple channels. Fictional stories are embedded into a pervasive game that can use multiple channels [6, 8]. The channels offered in the game are used to exploit the game's fictional story. For example, in Perplex City⁸, trading cards are used to introduce its characters and story. Web sites, emails, phone calls, and SMS messages are cooperatively used to solve riddles in the mystery story. Our approach is also a useful way to design the transmedia story telling. Especially, the form to represent a story affects how an ideological message is conveyed to a user. The transmedia storytelling divides a story across multiple media so that it is a possibility to choose the most suitable form to attract a user and to convey a message to a user.

Designing a user's experience [3] is related to the value based design framework. In the current approach, we extracted and analyzed values from a newly designed artifact, but it may be desirable to investigate how the values are emerged by analyzing a user's activities. Since designing values strongly depends on a user's experience, in the next step, it is an important research question to explore how values affect the user's experience, and how the values designed in the artifacts interact with the values emerged in the user's experience.

Popular Japanese games such as *the Legend of Zelda* and *Kid Icarus*⁹ offer rich fictional stories incorporating the persuasive and ideological value. However, the games cannot make the values tangible in the real world because the games do not offer associations between the real world and the virtual world.

"Seichi Junrei" is a typical geek culture in Japan, especially related to Japanese animation, manga and game, in which people tend to visit famous locations from animation, manga and game. "Seichi" means "Holy Land", "Junrei" means "Pilgrimage". Anime fans arrive at that location, and take pictures with the same screen/angle of the animation, and upload them to their blogs. The most important aspect of "Seichi Junrei" is to bring something from the fictional story to the real world. The fans create new stories with these pictures and the virtual characters appearing in the fictional stories, and co-construct the stories to share them within their communities. This is a very interesting phenomenon to harmonize the real world and the fictional world. We believe that interactive pervasive games or social information services based on fictional stories are very promising tools to increase the reality of the fictional world, and the tools enhance the "Seichi Junrei" phenomena by realizing more tight integration between the fictional world and the real world. The experiences described in the paper will offer useful insights to design tools that will realize new types of transmedia storytelling.

⁸ http://perplexcitywiki.com/wiki/Main_Page

⁹ <http://kidicarus.nintendo.com/>

6 Conclusion

This paper presented some observations on the usage and the design of *Augmented TCG* that enhances remote trading card game play against empathetic virtual characters. We discussed that *Augmented TCG* can be considered as a one form of transmedia storytelling, and proposed the value-based design framework for designing persuasive transmedia storytelling.

Our approach is also useful to enhance gamification [11] with transmedia storytelling. The current gamification design focuses on how to offer incentives by using game mechanics. Such approach is useful to increase extrinsic motivation, but it is hard to increase intrinsic motivation. Our finding is that a virtual character can be used as a medium to convey ideological concepts efficiently, and this can be used to change a user's attitude to keep his/her obtained good habits for a long time.

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