Persuasive Play as Interactive Art

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Abstract: Interactive art utilizes the procedural qualities of computers to aid audiences in rethinking social and cultural assumptions that are disturbing, biased, or unsustainable. The notion of play that has been widely discussed in game and performance studies gives insight into designing interactive systems that physically and cognitively involve the audience. This paper introduces the concept of *Persuasive Play,* which involves engaging the physical body of the audience with the rules of the interactive systems to transform their previous perspectives about culture and society. This paper shares information regarding teaching interactive art based on structures of persuasive play. By adopting three schemas from game design—rules, play, and culture—, students gained guidance regarding creating interactive experiences. Student work demonstrated the three types of persuasion: demonstrative, illustrative, and associative.

1. Introduction

Art helps us rethink social and cultural assumptions that are disturbing, biased, or unsustainable. *Disruptive Devices* is a digital kinetic artwork that was showcased in Siggraph 2020 by Neil Mendoza [1]. In Mendoza's three-part series, the audience rotated a crank wheel to move a hand-shaped prop and catch virtual animals on the screen; a monkey tried to run away from the hand despite having nowhere to hide. In this artwork, the audience functioned as a human who treats nature as an infinite resource and disrupts the ecosystem. As seen in this example, interactive art encourages the audience to explore the meaning of artwork by acting within an interactive system through their body.

Figure 1. *Disruptive Devices* **by Neil Mendoza**

In this paper, the author proposes teaching interactive art through the creation of persuasive game systems that engage the audience's body. Game studies provide insight into how to create a persuasive interactive system through computers. In games, rules that simulate the real-world system help players construct an understanding of and interact with the real world [2]. Learning game design helps students understand the schemas for creating interactive experiences and enables distinguishing three types of persuasion. Given the relatively few studies exploring how physical actions are utilized for persuasive games, student projects provide insight toward future research.

2. Literature Review

A. Persuasive Play

Researchers in games and performance studies discuss how playing a game or acting in a performance can be a way of critiquing the cultural and social reality. Bogost claimed that games utilize the procedurality of computers to make arguments about our socio-cultural status [2]. Games create rules that represent real-world phenomena for the audience to interact with and learn about. Such games include the ridiculously troublesome airport security systems and unrealistic ideals regarding balancing various public policy issues. Salen and Zimmerman argue that playing a game creates a new reality [3]. They borrow the concept of the magic circle, which a player enters to play a game and makes sense of through the game. Once the audience enters the magic circle, they try to learn about and believe the new reality, which is supported by what Salen and Zimmerman refer to as meaningful play.

Although the virtual game itself can be an effective method of persuasion, physically engaging the body reveals a new channel to construct an understanding of such persuasive messages. While in conventional performances audiences remained recipients rather than actors, games give the

audience an active role. Such actions can transform previous social boundaries, habits, and thoughts [4]. Performance studies describe actions as constitutive, referencing the audience's individual experiences, but also as influencing social and cultural perspectives [5]. Although play happens outside the real world, it motivates the player to revisit their thoughts by providing opposing scenarios that contradict previous notions.

By adopting the notion of the magic circle, the author proposes the term *Persuasive Play*, which refers to how audiences are persuaded regarding the meaning of a situation when physical actions are performed during gameplay. As Kwastek mentioned, knowledge arises "through the interplay between transformative experience and its reflection," and the "recipient's activity oscillates between physical experience and cognitive interpretation" [5]. Similarly, in persuasive play, meaning is created through the rule systems of the game and clashes with the audience's previous perspectives about culture and society. Finally, the audience is persuaded by discovering a new reality where the game makes sense as a persuasive play system.
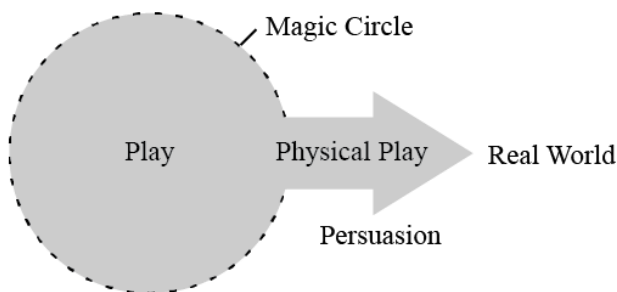

Figure 2. Persuasive Play

3. Persuasive Play in Interactive Art

The author taught the class Media Art Studio in the Art & Technology program in Sogang University during the fall semester in 2019 and 2020 with 10 to 20 each year. Students were a mixture of Korean students and international exchange students who had taken introductory programming and visual art classes prior. This class aimed to teach students the vocabulary to design and develop interactive experiences and to subsequently apply their knowledge. The class started with discussions about media theories such as the aesthetics of new media, qualities of immersion and agency, and critical and persuasive rhetoric for media design. Students read text and critiqued examples of media art projects. Afterward, students were introduced to the Unity 3D environment and developed their final project for three weeks.

The work of the students and how persuasive game schemas and frameworks were built in the student work are described below. Students used Unity 3D with other tools, such as MaxMSP, and each student developed their work individually. Some students also used 3D cameras, such as

Kinect, while others imagined their project to be showcased via virtual reality headsets. The final projects were showcased in class before the COVID-19 pandemic and were shared as a demo thereafter.

A. Schemas for Persuasive Play

Salen and Zimmerman provide three schemas for games: rules, play, and culture [3]. Rules, play, and culture are "the organization of the designed system," "the human experience of that system," and "the larger contexts engaged with and inhibited by the system," respectively. The three schemas are common for any kind of game and help individuals understand and create games. In this class, the three schemas were applied in creating interactive art persuading the audience.

Rules are important in designing both interactive art pieces and games because they provide structure to the interactive system. Rules can be designed to reflect the structure of the real-world systems that the designer wants to critique. Meanwhile, play is what the audience experiences due to their actions, which are concerned with the movement performed by players and how they express themselves during gameplay. When performing an action, the audience enters and becomes part of the persuasive system with an active role.

Finally, culture is the context within which gameplay occurs. By creating a game that reflects the status quo of society, the designer can help the audience transform their thoughts about society during gameplay. Games interact with contexts outside the actual rules and gameplay. These three schemas were introduced and utilized by students in the class project.

B. Student Work

Figure 2. Burning grass in *The Pantanal Experience*

The Pantanal Experience was an immersive VR simulation that resembles the fire burning in the Pantanal wetlands in Brazil, one of the most biodiverse places globally. In 2020, roughly a quarter of the vast Pantanal burned in wildfires exacerbated by climate change. The experience starts with a peaceful scene with animals wandering. Suddenly, the grass and tree catch fire, and the fire spreads immediately without time to flee. The audience hears animals crying. The goal of the game is to raise awareness regarding the seriousness of the fire in the Pantanal from the perspective of nature, who cannot do anything but wait for the human to extinguish the fire.
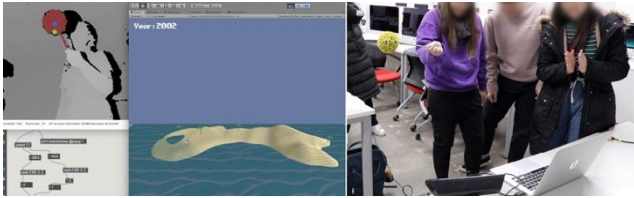
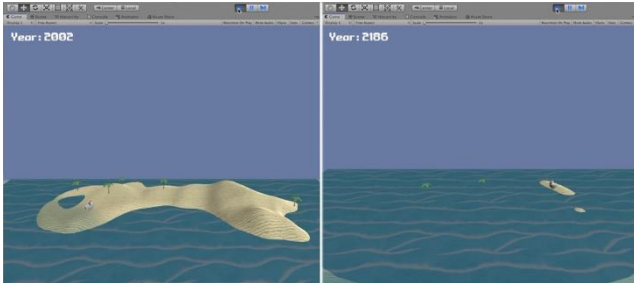**Figure 3. Audience playing with *Passage of Time***

Figure 4. Rising sea level in *Passage of Time*

Another student-created work, *Passage of Time*, promoted awareness about global warming. The rising sea level is a pressing issue that is often forgotten because dew people can experience its effects directly. The interactor plays the role of an omnipotent god who can save a virtual chicken from drowning. The sea level gradually rises as time passes on the screen. The player can see how the sea level rises quickly and tries to guide the chicken to higher land, although all the land eventually drowns underwater. In this system, the difficulty of the game alerts individuals about the gravity of global warming, while the goal to save the chicken provides entertainment.

Figure 5. Abstraction of the city in the *City of Sound*

Finally, *City of Sound* was a sensory interpretation of the noise in the city. The game is set in the year 2077 in a sci-fi city in space, where the audience can explore and interact with objects to listen to the sound of the city. Although noise in the city can be disturbing, the system associates such noise with music. The audience gets to explore the abstracted representation of a city using the keyboard. As they enter different objects, a different sound is triggered.

The audience explores various parts of the virtual city and gets reminded about their real city environment can be a musical stage in the future.

C. Three Types of Persuasion

Bogost distinguishes three types of advertising in persuasive games: demonstrative, illustrative, and associative [2]. Demonstrative, illustrative, and associative advertising "provide direct information," "communicate indirect information," and "focus on the intangibles of a product," respectively. While the categorization of the three schemas was not introduced during class, it enabled students to reflect on the three types of persuasive interactive art.

In *The Pantanal Experience*, information about the Pantanal fire is provided through a simulated system demonstrating the fast-catching fire. This helps the audience understand the critical situation. In the *Passage of Time,* the chicken reminds us of the threat to human beings. Although not directly indicated, this can be humorously interpreted by the audience. In the *City of Sound*, the musical experience of the city transforms notions regarding a noisy city to that of a pleasurable fantasy space with musical memories. The commonality of these works is the simulation of a serious real-world problem, allowing the audience to realize the gravity of the problem through interactive entertainment. They are eventually persuaded by being informed about useful insights regarding the pressing issue. All three types of persuasion can transform the audience's preconceptions about society either through positive or negative connotations.

4. Conclusion

In summary, teaching persuasive games and engaging the physical body enabled the author to teach media art classes successfully. Student work demonstrates how various types of persuasive interactive art can be created. These works were also analyzed from the perspective of the three schemas of games: rules, play, and culture. The commonality that connects these works is that they invoke physical interaction from the audience. The socio-cultural environment defines the context of the problem and interaction. The rules establish guidelines for physical interaction. Meanwhile, play makes the physical interaction joyful and memorable, and culture makes the game meaningful. Engaging in physical actions was not only entertaining but also helpful for the audience to reflect on the meaning of the interactive experience by enhancing imagination of the virtual scenario through a multisensory experience. Future work should evaluate such interactive systems to understand the benefits or challenges physical play brings into the persuasive system.

Acknowledgement

References

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Biographies

Jean Ho Chu is an artist, researcher, and educator exploring new forms of artistic expression through digital technology. She has been creating interactive multi-media artwork and tangible interfaces for the past decade. Her research interests include interactive media arts, digital cultural heritage, and interactive narratives.